

**Revised Environmental Assessment
Perpetua Forests Company Right-of-Way
Road Construction Project**

EA Number OR118-08-006

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United States Department of the Interior
Bureau of Land Management
Medford District
Glendale Resource Area
Josephine County, Oregon

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Abstract:

The Glendale Resource Area, Medford District, Bureau of Land Management (BLM) is determining the effects of constructing, using, and maintaining 3,609 ft of permanent road across BLM land in response to Perpetua Forests Company's request to access their private property for the purpose of long-term management and removal of forest products on their land under an amendment to a right-of-way agreement pursuant to 43 CFR 2812. The proposed location of this road is on BLM Matrix land allocation and in the Wolf Creek sixth-field watershed. The Project Area is located in portions of Township (T) 33S, Range (R) 5W, Sections 17, 18, and 20.

A previous Perpetua Forest Company Right-of-Way Road Construction Project Environmental Assessment (EA#OR118-06-006) and Finding of No Significant Impact (FONSI) was published on February 1, 2008. The BLM received five public comment letters on EA#OR118-06-006 primarily requesting analysis of temporary road construction in comparison to the permanent road construction proposal and a narrower road clearing width, a ridge top location, further disclosure of resource impacts from 300 ft of full bench road construction, and provide site specific mapping for review. As a result, the Glendale Resource Area has revised the EA and FONSI to address public comments.

This environmental assessment discloses the predicted environmental effects of two alternatives: Alternative 1 (No Action) and Alternative 2 (Proposed Action).

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FINDING OF NO SIGNIFICANT IMPACT

A previous Perpetua Forest Company Right-of-Way Road Construction Project Environmental Assessment (EA#OR118-06-006) and Finding of No Significant Impact (FONSI) was published on February 1, 2008. The BLM received five public comment letters on EA#OR118-06-006 primarily requesting analysis of temporary road construction in comparison to the permanent road construction proposal and a narrower road clearing width, a ridge top location, further disclosure of resource impacts from 300 ft of full bench road construction, and provide site specific mapping for review. As a result, the Glendale Resource Area has revised the EA and FONSI to address public comments.

Based upon review of the revised EA (Environmental Assessment #OR-118-08-006) and supporting project record, I have determined that Alternative 2 (Proposed Action) is not a major federal action and would not significantly affect the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. Therefore, an environmental impact statement is not needed. This finding is based on the following discussion:

Context. Perpetua Forests Company requested this road construction for continued use and maintenance of 3,609 ft of permanent road to access their private property through BLM administered lands on July 28, 2005. The Proposed Action is a site-specific Right-of-Way (ROW) action directly involving approximately 3.5 acres of BLM (Bureau of Land Management) administered land that by itself does not have international, national, region-wide, or state-wide importance. The Proposed Action is located within the Matrix land use allocation and within the boundaries of the 6th field Hydrologic Unit Condition (HUC 6) boundaries of the Wolf Creek sub-watershed.

The discussion of the significance criteria that follows applies to the intended action and is within the context of local importance. Chapter 3 of the revised EA details the effects of the Proposed Action on BLM land and the 80 acre harvest of Perpetua Forests Company's land. None of the effects identified, including direct, indirect and cumulative effects, are considered to be significant and do not exceed those effects described in the *Medford District Resource Management Plan/Final Environmental Impact Statement* (June 1995).

Intensity. The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27.

1. Impacts may be both beneficial and adverse. The predicted environmental effects of the Proposed Action, most noteworthy, include:

a) Alternative 2 (Proposed Action) would result in soil compaction and soil displacement that would reduce localized areas of soil productivity on BLM land. The proposed permanent road construction would result in soil disturbance on approximately 3.5 acres, and soil compaction on about 1.2 acres. This would permanently reduce the number of acres available for timber production on Matrix lands by approximately 1.2 acres. There would additionally be up to a 0.5 acre loss in soil productivity from disturbance and compaction on the 33-16-18 disposal site. This loss would not be permanent, but could persist for several decades within the Wolf Creek HUC 6 sub-watershed analysis area.

Given the scope and location of the proposed road construction (Alternative 2), the continued use, and the maintenance on BLM land; these actions are anticipated to have a negligible impact to soil productivity in federal lands at the watershed scale. These actions would be consistent with all soil productivity and compaction set forth in the Medford District RMP.

Eroded material from the construction and use of the proposed road would remain primarily onsite within roadside vegetation. The proposed road construction would begin on the north side of the ridge approximately 200 feet from the ridgetop, and would then extend onto and over the ridge to the south side of the hillslope for the remaining 3300 feet. On the south side of the ridge, the road is never more than approximately 500 feet from the ridge. Slopes on the south side of the ridge, where a majority of the construction activities would occur, are generally less than 35%. On the north side of the ridge where the first 300 feet of this road would be located, slopes exceed this, at about 65%. To mitigate for slope steepness, this first 300 feet would be full bench construction which would prevent excessive erosion, or any potential slumping issues. Slopes throughout this Project Area have sufficient coarse ground cover, in the form of ground vegetation and/or downed woody debris and fine overstory litter, to keep erosion primarily on site. There are no stream crossings or headwalls within the clearing limits of the proposed road construction, and the road would not be hydrologically connected to any stream channels. The proposed road would also be constructed using outsloping, eliminating ditchlines and cross drains that would otherwise increase erosion by concentrating and routing intercepted water. Hauling of excess material from the first 300 feet of full bench construction would result in small amounts of erosion on road surface, and locally in the area immediately downslope of the 33-5-18 and 33-5-7 roads. Small quantities of onsite erosion in the immediate surrounding areas around disposal sites would also occur. Erosion would not result in a visible increase in stream turbidity, or a measurable increase in stream sediment deposition for more than 25 feet within any stream channels located below road crossings.

The proposed road location, on both the north and south slopes, would not measurably increase the risk of mass wasting. This conclusion is based on the proposed roads ridge-top and upper slope position which would not allow for ample subsurface flow concentrations to form, and the employment of site specific project design features that would require full bench, outsloped construction, on the first 300 feet where steep slopes are present. Outsloped construction would also be used on the remaining portion of the road, which would allow water intercepted by the road surface to readily flow off the road surface and be reabsorbed into the downslope vegetation. Because this would keep large amounts of concentrated water from being routed down the slope, this construction feature would further reduce the risk of mass wasting. Disposal sites are all located on stable, nearly flat sites, and material would be disposed of at least 25 feet away from road cutbanks or slope breaks ensuring that any eroded material would not result in an oversteeping of any adjacent slopes. As such, this action would have a neutral effect on the risk of mass wasting potential.

The road construction on BLM land would increase open space within the Wolf Creek sub-watershed by 1.2 acres which would maintain the percentage of open space conditions within the Transient Snow Zone (TSZ) of this sub-watershed at 19%. Since sub-watershed and TSZ open space conditions would remain below 25%, canopy removal for the road construction would not result in an increase in the magnitude of current peak flow events, or an increase in annual water yields within the Wolf Creek HUC 6 drainage.

b) There are three main reasons why potential weed establishment that might be caused by the Proposed Action are not expected to result in a detectable effect to overall ecosystem health. First, surveys indicate that very small percentages (less than 0.25 acres) within the Planning Area – are affected by noxious weeds. Second, the species actually residing at the proposed ROW location is not considered a priority species for manual treatment, as biological controls have proven effective at containing and eventually reducing the existing populations. Third, Project Design Features (PDFs) have been established to minimize the rate at which project activities might potentially spread noxious weed seed from outside/adjacent sources.

BLM's influence over the causes of the spread of noxious weeds is limited to those caused by human activities. Additional human disturbance and traffic would increase the potential for spreading noxious weed establishment, but regardless of human activity, spread of these weeds will continue through natural forces. Thus, the BLM cannot stop the spread of noxious weeds but might reduce the risk or rate of spread. Under the No Action Alternative, noxious weeds are likely to spread over time regardless of whether or not the ROW is granted, and that rate would not be altered to any detectable degree at the 6th field watershed level by the Proposed Action.

c) See effects to Endangered Species Act (ESA) threatened and endangered species in criteria # 9 below.

There would be no adverse effect to Essential Fish Habitat (EFH) for coho or chinook because the new road construction would be located outside riparian reserves, would have no stream crossings, and would be approximately 1.9 miles from EFH. Shade, temperature, pool habitat and potential future woody debris recruitment would not be affected because the proposed road would be located outside of riparian reserves. Disposal of end hauled material at any of the four possible disposal sites for excess material is not expected to result in sediment entering stream channels and therefore EFH because of the flat topographical features and there are no mechanisms for waste material to enter stream channels.

None of the environmental effects disclosed above and discussed in detail in Chapter 3 of the EA are considered significant.

2. The degree to which the selected alternative will affect public health or safety.

Public health and safety would not be affected. The Proposed Action is comparable to other right-of-way road construction projects which have occurred within the Glendale Resource Area with no unusual health or safety concerns.

The Glendale Resource Area introduced this project through the quarterly BLM Medford Messenger publication. A brief description of proposed projects, such as Perpetua Forests Company Right-of-Way Road Construction Project, a legal location and general vicinity map are provided along with a comment sheet for public responses. The project was included in these quarterly publications beginning in fall, 2005 and the Perpetua Forests Company Right-of-Way Road Construction Project Environmental Assessment (EA#OR118-06-006) was released for public comment on February 1, 2008. Two public health and safety concerns were identified in the comments to this EA. One concern was the location of a mining adit posing a safety risk for the stability of the proposed road's structure and another concern was potential impacts to a private resident's water source (Cabbage Lane) outside of the Project Area. The mining adit is not located within the proposed road construction location, therefore; the proposed construction would not pose an additional risk to public health or safety. Since no measurable additional sediment would be expected to reach the closest water source, an intermittent stream, approximately 250 feet downslope, there is no affect to the Cabbage Lane's water source from the proposed road construction approximately 350 ft away.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas. There are no park lands, prime farm lands, wetlands, wild and scenic rivers or ecologically critical areas within the proposed right-of-way location across BLM land. There are no developed recreation sites that would be affected by the Proposed Action. The area is open to dispersed recreation use, as it most of the Glendale Resource Area. The Proposed Action would have a neutral effect on dispersed recreation within the resource area. While there might be increased logging truck traffic during the operational months, this type of activity is typical for the area because of harvesting on private and other government owned lands within the state of Oregon. Cultural surveys were completed for the Perpetua Forests Company Right-of-Way Road Construction

Project Area and no sites were found. If cultural resources are located during the implementation of an action, the project would be redesigned to protect the values present. The public identified a concern regarding potential visual impacts to the historic site of Golden National Historic State Park located in T33S-R5W-Section 19 and conservation easements on the Cabbage Lane property in T33S-R5W-Section 20. Chapter 3 and Appendix 3 analyzed the potential impacts of the proposed activities on these lands and determined the effects are within the scope of the Medford District Resource Management Plan's Environmental Impact Statement which expected all private forest land would be harvested on a 60 year rotation. Therefore there are no significant visual effects associated with Perpetua Forests Company's harvest in T33S-R5W-Section 20 from the proposed road construction across BLM managed land in T33S-R5W-Section 17. Management restrictions of conservation easements apply to private land only.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial. The effects of the Proposed Action on BLM on the quality of the human environment are adequately understood by the interdisciplinary team to provide analysis for the decision. There are no highly controversial effects from the action alternatives. A complete disclosure of the predicted effects is contained in Chapter 3 and Appendix 3 of the EA.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. The effect of the Proposed Action on BLM is not unique or unusual. The BLM has experience with constructing road and authorizing the construction of roads in similar areas and have found the effects to be reasonably predictable. There are no predicted effects on the human environment which are considered to be highly uncertain or involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The Proposed Action on BLM land does not set a precedent for future actions that might have significant effects nor does it represent a decision in principle about future consideration. The Proposed Action would occur within the needs identified in the Medford Resource Management (RMP), "Continue to make BLM-administered lands available for needed rights-of-way where consistent with local comprehensive plans, Oregon statewide planning goals and rules, and the exclusion and avoidance areas identified in this RMP," (p.82). Any future projects would be evaluated through the NEPA (National Environmental Policy Act) process and would stand on their own as to environmental effects.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. The interdisciplinary team evaluated the Proposed Action in context of past, present and reasonably foreseeable actions. Significant cumulative effects outside those already disclosed in the *Medford District Resource Management Plan/Final Environmental Impact Statement* are not predicted. A complete

disclosure of the effects of the Proposed Action is contained in Chapter 3 and Appendix 3 of the EA.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. Cultural surveys were completed within the proposed ground disturbing activity location for the Perpetua Forests Company Right-of-Way Road Construction Project Area on BLM land and no sites were found. The Proposed Action would not adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places, nor would the Proposed Action cause loss or destruction of significant scientific, cultural, or historical resources. The public identified a concern regarding potential visual impacts to the historic site of Golden National Historic State Park located in T33S-R5W-Section 19. Chapter 3 and Appendix 3 analyzed the potential impacts of the proposed activities on these lands and determined the effects are within the scope of the Medford District Resource Management Plan's Environmental Impact Statement which expected all private forest land would be harvested on a 60 year rotation. This area has historically been a working landscape for timber management. Therefore, the proposed ROW or private harvesting would not affect the visual experience of Golden State Park and there are no significant visual effects associated with Perpetua Forests Company's harvest in T33S-R5W-Section 20 from the proposed road construction across BLM managed land in T33S-R5W-Section 17.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Coho salmon- threatened species

The proposed road construction, end-hauling/disposal sites, continued use, and maintenance would not effect the federally listed as threatened Southern Oregon Northern California (SONC) coho salmon. Disposal of end hauled material at any of the four sites are not expected to result in sediment entering stream channels and therefore CCH because of the flat topographical features and there are no mechanisms for waste material to enter stream channels.

Spotted owl- threatened

The Perpetua Forests Company Right-of-Way Construction activities on BLM land would remove approximately 1 acre of suitable habitat and 2.5 acres of dispersal habitat within a 1.3 mile radius of the Board Tree East and Foley Glen owl sites which would remain above 40% (43.5% and 46.6%, respectively) federal suitable habitat. No change would occur within a 0.5 mile radius or 30 acre nest patch to Foley Glen. One acre of dispersal habitat removed and no change to the nest patch would occur within 0.5 miles of Board Tree East, which remains above 50% suitable habitat on federal habitat. The amount of suitable habitat retained for each site is expected to be sufficient support spotted owl occupancy and reproduction (Courtney et al. 2004, Zabel et al. 2003).

Demographic survey records show the adjacent owl sites as not nesting near the ROW. Protocol visits have not detected resident spotted owls in either Board Tree East owl site since 2000 or in Foley Glen since 2001, but have been occupied by barred owls. The sites may not support spotted owls or spotted owls may remain undetected. The effects from the ROW road construction on suitable owl habitat in Matrix lands allocation are expected to be adverse, but not result in a measurable change in the use of forest stands by the adjacent vacant spotted owl sites for nesting, roosting and foraging, or dispersal. No cumulative effects from foreseeable suitable habitat removal or downgrade on federal land are expected to occur within the home range of the two spotted owl sites, which retain sufficient habitat to support spotted owls. The viability of owl sites in Matrix land allocation is expected to be reduced, and the effects from the project proposal are within the analysis of the NWFP (USDA/USDI. 1994a 3&4-241).

Critical Habitat

The Perpetua Forests Company Right-of-Way Construction activities on BLM land would remove approximately 1 acre of 35,165 acres of suitable northern spotted owl habitat and 2.5 acres of 24,585 acres of dispersal habitat (FY 06-08 BA p. 50) within Critical Habitat Unit (CHU) OR-32 on BLM land.

Removing 1 acre of 35,165 acres of suitable habitat and 2.5 acres of 24,585 acres of dispersal owl habitat from CHU OR#32 (FY 06-08 Biological Assessment (p.50) in a narrow strip near ridgetop would not measurably reduce the ability of the CHU to provide nesting, roosting, foraging, and dispersal habitat. The narrow corridor removal of scattered large trees interspersed with smaller trees would maintain opportunity for nesting, roosting, foraging, and dispersal in the effected stand, based on the fact that the near ridgetop/upper slope location: (1) is not likely to be selected for nesting or roosting, as owls typically use the lower two thirds of slopes for this (Blakesley et. al., 1992; Hershey et. al., 1998); (2) the opening created for the ROW would be limited to 40-60 ft wide and owls will disperse across roads and forage along edges, (3) most of the ROW is in younger dispersal age habitat, and (4) and absence of spotted owl nest sites within ¼ mile since Glendale Resource Area began monitoring the owl sites in 1988 indicates known nesting habitat within the stand would not be adversely affected. The cumulative effects of removing approximately 1 acre of suitable and 2.5 acres of dispersal habitat for a ROW within CHU OR-32 when added to other past, present, and foreseeable activities is not expected to adversely effect the function of spotted owl critical habitat.

The BLM completed informal consultation with the USFWS for the Proposed Action on BLM land, along with other projects that maintain spotted owl habitat. The Letter of Concurrence from the USFWS (USDI-USFWS 2007 p. 23) determined the effects to spotted owl, or designated spotted owl critical habitat to be “may affect, not likely to adversely affect” since the project implements the standards and guidelines of the Northwest Forest Plan and the District’s RMP and will incorporate the mandatory Project Design Criteria.

Fisher - proposed for threatened species listing

The Proposed Action is unlikely to impact fishers because they have not been found in the Glendale Resource Area for successive years by peer-reviewed survey methods. Approximately seventy remote camera surveys were conducted to protocol (Zielinski and Kucera 1995) from 2002-2005 in the Glendale Resource Area, with no fisher detections, including stations in Section 17, 18, and 9, adjacent to the proposed ROW. Fishers have not been observed by BLM field personnel over many successive years of field work within the Resource Area. Although it is possible that fisher may occur as residents or disperse through the project area, the absence of detections from surveys and frequent visits from field personnel indicates that it is unlikely large or small populations occur. Approximately 3 acres of forest which includes scattered large trees and continuous canopy, contributing as late successional habitat features to fisher habitat, would be removed. Gated access would reduce but not completely eliminate traffic disturbance to the area. The Planning area contains large block federal ownership in late-successional condition with suitable forest structure for fishers, but is constrained by well developed roads with high volumes of traffic and residential areas that may preclude the use by fishers. The Project Area would not change the assessment predicted in the NWFP (USDA/USDI 1994a, p.J2-54), which stated the fisher failed to pass the species viability screens due to its dependence on interior forest habitat and large, down woody debris.

Plants - There would be no anticipated effect from the Proposed Action on any federally listed plant.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The Proposed Action does not violate any known federal, state, or local law or requirement imposed for the protection of the environment. Furthermore, the Proposed Action is consistent with applicable land management plans, policies, and programs (EA, Chapter 1.5).

Chapter 1.0 Project Scope

1.1 Introduction

On July 28, 2005, Perpetua Forests Company requested this road construction for use and maintenance of 3,609 ft of permanent road to access their private property through BLM administered lands. This revised EA will analyze the impacts of proposed forest management activities on the human environment in the Perpetua Forests Company Right-of-Way Road Construction Project Planning Area. The revised EA will provide the decisionmaker, the Glendale Field Manager, with current information to aid in the decision making process. It will also determine if there are significant impacts not already analyzed in the Environmental Impact Statement for the Medford District's Resource Management Plan and whether a supplement to that Environmental Impact Statement is needed or if a Finding of No Additional Significant Impact is appropriate.

Chapter 1 of the revised Environmental Assessment (EA) for the proposed Perpetua Forests Company Right-of-Way Road Construction Project provides a context for what will be analyzed in the EA, describes the kinds of action we will be considering, defines the Planning and Project Areas, describes what the Proposed Action needs to accomplish, and identifies the criteria that we will use for choosing the alternative that will best meets the purpose and need for this proposal.

1.2 Purpose and Need for the Proposal

This environmental assessment analyzes the environmental effects associated with Perpetua Forests Company's request to construct, use, and maintain 3,609 feet of permanent road across BLM Matrix land allocation for long-term management of their private land and removal of forest products.

The purpose of this project is to meet the needs identified in the Medford District Resource Management Plan ROD (RMP ROD). Those objectives are to:

“Continue to make BLM-administered lands available for needed rights-of-way where consistent with local comprehensive plans, Oregon statewide planning goals and rules, and the exclusion and avoidance areas identified in this RMP,” (p.82);

“Consider new locations for rights-of-way projects on a case-by-case basis. Applications may be approved where the applicant can demonstrate that use of an existing route or corridor would not be technically or economically feasible; and the proposed project would otherwise be consistent with this resource management plan and would minimize damage to the environment.” (USDI 1995, p.83); and

“Develop and maintain a transportation system that serves the needs of users in an environmentally sound manner.” (USDI 1995, p.84).

1.3 Project Location

The Planning Area is located southeast of the community of Glendale (see Appendix 1 for project maps) and delineated by the 28,360 acres Wolf Creek HUC 6 sub-watershed. The legal description of the Planning Area is T33S-R5W Sections 3-11, 13-23, 26-32, 34; T33S-R6W Sections 1-3, 9-31; T33S-R7W Sections 13, 24-26, 35, 36; and T34S-R7W Section 1; Josephine County, Willamette Meridian. The Planning Area is located on Oregon and California (O&C) Railroad Lands and designated as Matrix land on federal lands that is a checkerboard pattern of public and private ownerships and is within in the 104,417 acre Grave Creek HUC 5 watershed.

The Project Area is defined by the area of ground disturbing and hauling activities on BLM land associated with the Perpetua Forests Company's request to access approximately 80 acres of their land for long-term timber management in T33S-R5W-Section 20. These activities include constructing, using, and maintaining 3,609 ft of permanent natural surface road on BLM land, off road number 33-5-18.0. See Figure 1-1 for a satellite image of the Project Area's topographical features.



Figure 1-1. Satellite Imagery of the Perpetua Forests Company Right-of-Way Road Construction Project Area Topographical Features. Image provided by Google Earth.

1.4 Plan Conformance

This Proposed Action conforms to the:

- *Final Supplemental Environmental Impact Statement and Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (Northwest Forest Plan FSEIS 1994 and ROD 1994);
- *Final-Medford District Proposed Resource Management Plan/Environmental Impact Statement and Record of Decision* (EIS 1994 and RMP/ROD 1995);
- *Final Supplemental Environmental Impact Statement: Management of Port-Orford-Cedar in Southwest Oregon* (FSEIS 2004 and ROD 2004);
- *Final Supplemental Environmental Impact Statement and Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (FSEIS 2000 and ROD 2001) including any amendments or modifications in effect as of March 21, 2004;
- the *Final Supplement to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (FSEIS, 2007 and ROD, 2007); and
- *Medford District Integrated Weed Management Plan Environmental Assessment (1998)* and tiered to the *Northwest Area Noxious Weed Control Program* (EIS 1985).

On July 25, 2007, the Under Secretary of the Department of Interior signed a new Survey and Manage Record of Decision¹ that removed the survey and manage requirements from all of the BLM resource management plans (RMPs) within the range of the northern spotted owl. In any case, I have designed this project to be consistent with the 2001 Survey and Manage ROD as modified by subsequent annual species reviews as allowed by the modified October 11, 2006 injunction.

The development and design of this project complies with the Northwest Forest Plan (NWFP) prior to the Annual Species Review process. The Glendale Resource Area conducted red tree vole surveys and provided management prescriptions consistent with Survey and Manage protocol and management recommendations in effect as of the 2001 ROD for Survey and Manage species whose range is in the Project Area. Information regarding effects of the project on “Survey & Manage” species has been incorporated in Chapter 3 and Appendix 3 of the EA. Therefore, this project complies with the NWFP prior to that amendment.

The Aquatic Conservation Strategy (ACS) consistency analysis (see Appendix 4 of this EA) evaluated the action alternative on BLM land in the Perpetua Forests Company

¹ Complete Title: Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Forest Service Land and Resource Management Plans Within the Range of the Northern Spotted Owl

Right-of-Way Road Construction Project EA and found the action alternative would not retard or prevent the attainment of the nine objectives or the four components of the ACS. Therefore, this project is consistent with the ACS of the NWFP Record of Decision (1994). The new road construction is proposed near a ridge top and not within a riparian reserve. The action alternative would not result in measurable adverse effects to water quality. There would be no measurable change to stream shade, water nutrient levels, flow regime, or chemical contamination of streams, or springs as a result of this action. This determination was based on the small spatial and temporal disturbances associated with the new road construction and haul on this road, and road use on existing roads.

Parts of the *Grave Creek Watershed Analysis* is incorporated by reference; the watershed analyses provides background for the project planning but are neither NEPA nor decision documents.

1.5 Permits and Approvals Required

In advance of amending O&C Logging Road Right-of-Way Permit M-2000EA and Right-of-Way and Road Use Agreement M-2000 (Alternative 2) Perpetua Forests Company would be required to pay the BLM the full stumpage value of the estimated volume of merchantable timber to be cut in the construction of the road (43 CFR 2812.5-1).

1.6 Public Scoping and Identification of Alternative Use of Resources

1.6.1 Public Scoping

The Glendale Resource Area accepts public comment of proposed forest management activities through the quarterly BLM Medford Messenger publication. A brief description of proposed projects, such as Perpetua Forests Company Right-of-Way Construction Project, a legal location and general vicinity map are provided along with a comment sheet for public responses. This project was included in these quarterly publications beginning in fall 2005, and no public comments were received.

Notification of the Perpetua Forest Company Right-of-Way Road Construction Project Environmental Assessment (EA#OR118-06-006) and Finding of No Significant Impact (FONSI) included publication of a legal notice in the Daily Courier, newspaper of Grants Pass, Oregon and a mailing to interested individuals, organizations, and agencies that requested a copy of the document through the scoping period of the Medford Messenger.

The BLM received five public comment letters primarily requesting analysis of temporary road construction in comparison to the permanent road construction proposal and a narrower road clearing width, a ridgetop location, further disclosure of resource impacts from 300 ft of full bench road construction, and provide site specific mapping for review. As a result, the Glendale Resource Area has revised the EA and FONSI to address public comments. Also see Appendix 6 for BLM's response to EA public comments.

1.6.2 Alternative Access Consideration

An evaluation of alternate means of access to the area of timber extraction other than road construction was explored with Perpetua Forests Company. In consideration of the absence of available roads and suitable helicopter landing and service areas within 0.75 miles creating logistical infeasibility of helicopter extraction, the original submittal for road construction location was found to be the only viable option to extract timber within the area of interest. Consideration of temporary road construction was not explored as the request from Perpetua Forests Company was for construction of a permanent road to provide long-term management and removal of forest products on their private land.

1.7 Decisions to be Made

The Glendale Field Manager is the official responsible for deciding whether a supplemental Environmental Impact Statement (EIS) should be prepared based on whether the Proposed Action would result in significant impacts to the human environment not already analyzed in the Environmental Impact Statements prepared for the Medford District Resource Management Plan and its amendments. If there are any such additional impacts that are significant, project proposals could be modified to mitigate the impacts so a SEIS would not be necessary. If it is determined that there is no need to prepare a SEIS, a Finding of No Significant Impact (FONSI) would be prepared. An additional decision to be made is whether to approve or deny Perpetua Forests Company's request to amend O&C Logging Road Right-of-Way Permit M-2000EA and Right-of-Way and Road Use Agreement M-2000 to authorize Perpetua Forests Company to construct, use, and maintain a permanent road for long-term management and removal of forest products from their private land.

Chapter 2.0 Alternatives

2.1 Introduction

This chapter compares the no action alternative (Alternative 1) with the action alternative, Alternative 2 (Proposed Action) as specified in 40 CFR (Code of Federal Regulations) § 1502.14. Descriptions summarize potential actions and outputs. Project Design Features were identified to ensure project compliance with higher level NEPA documents, laws and BLM guidelines. Since there were no unresolved conflicts concerning alternative uses of available resources identified by the interdisciplinary team, there was no procedural requirement to develop additional action alternatives (**Appendix 2**). As such, the alternatives that will be analyzed in detail in this revised EA include the No Action Alternative and the Proposed Action Alternative.

2.2 Alternative 1: No Action

Under this alternative, the federal management actions described under the action alternatives would not take place at this time. However, the opportunity to construct a road through BLM to access the Perpetua Forests Company parcel in T33S-R5W-Section 20 would continue to be a viable option for the future but would be analyzed through a separate environmental analysis. The timber on private land would remain unharvested unless other access becomes available.

2.3 Alternative 2: Proposed Action

Pursuant to 43 CFR 2812 the proposed federal action is to amend O&C Logging Road Right-of-Way Permit M-2000EA and Right-of-Way and Road Use Agreement M-2000 to authorize Perpetua Forests Company to construct, use, and maintain 3,609 feet of natural surface road off of BLM road #33-5-18.0 in T33S-R5W-Section 17 SE1/4, SW1/4 for long-term management and removal of forest products on their private land.

The new permanent road would be identified as road #33-5-17.1. The right-of-way clearing width would be 60 ft for the first 300 ft of road. The clearing width would range from 40-60 ft on the upper portions of the hillslope and near the ridge. The useable running surface of the road width would be 14 ft; however, it would be wider at turnouts, turnarounds, and for radius curves.

Since the first 300 ft of the proposed road construction would have side slopes that generally exceed 55%, the road would be constructed with a “full bench” road construction design. In full bench construction an excavator removes material on the sideslope to create a road prism, and the majority of the excavated material is end hauled to an approved disposal site.

This road design provides greater soil stability and prevents excessive erosion, or any potential slumping where topographical conditions may be steep. Figure 2-1 depicts the engineering standards to accommodate road construction in such topographical conditions. See Figure 2-2 for a photograph of the slope where the full bench construction design would be applied.

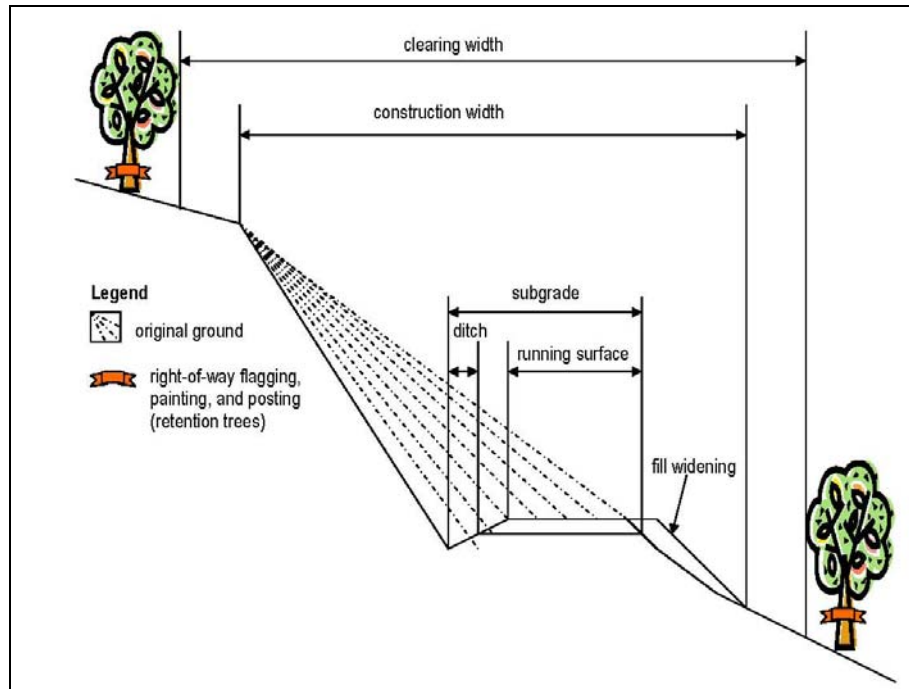


Figure 2-1. Design Components of “Full Bench” Road Construction

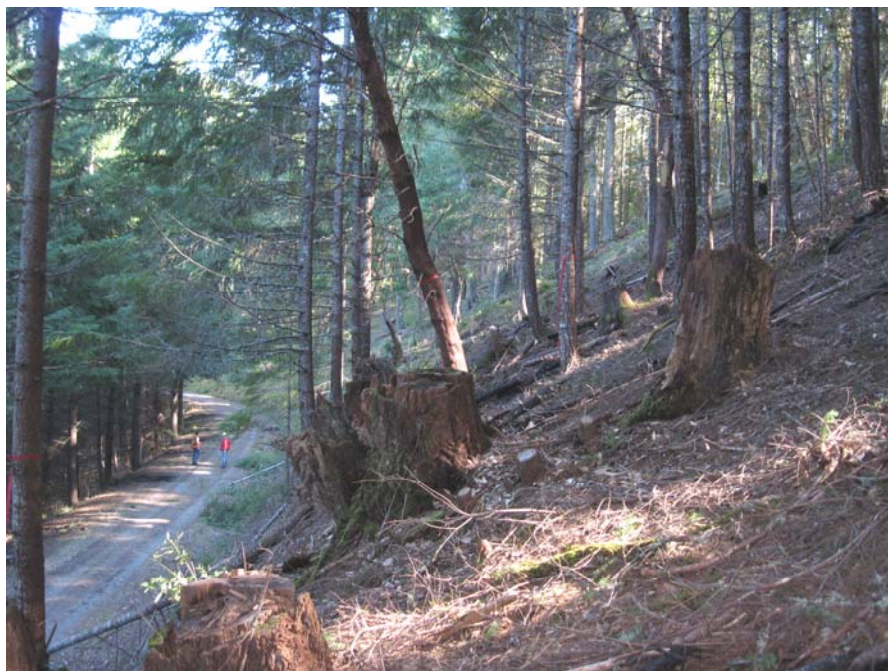


Figure 2-2. Topography of the first 300 ft of proposed road construction.

The remaining 3,309 feet would be a 40 foot wide right-of-way (excluding turnouts, turnarounds, and radius curves which will involve clearing limits up to 60 feet) and ends approximately 150 ft from the ridgetop.

Figures 2-3 illustrates the engineering standards required for constructing a “cut and fill” road with less than 55% sideslopes present at the proposed road construction site. The remaining 3,309 ft of road construction would apply this “cut and fill” road design. There is no set standard for road construction clearing widths since ground conditions, road construction tolerances (running widths), turnout spacing, and drainage structures dictate the width of the clearing needed to meet use objectives and safety standards. For example, roads constructed on flat ground require clearing the traveled way or road template with minimal “cut and fill” and minor clearing for sight distance.

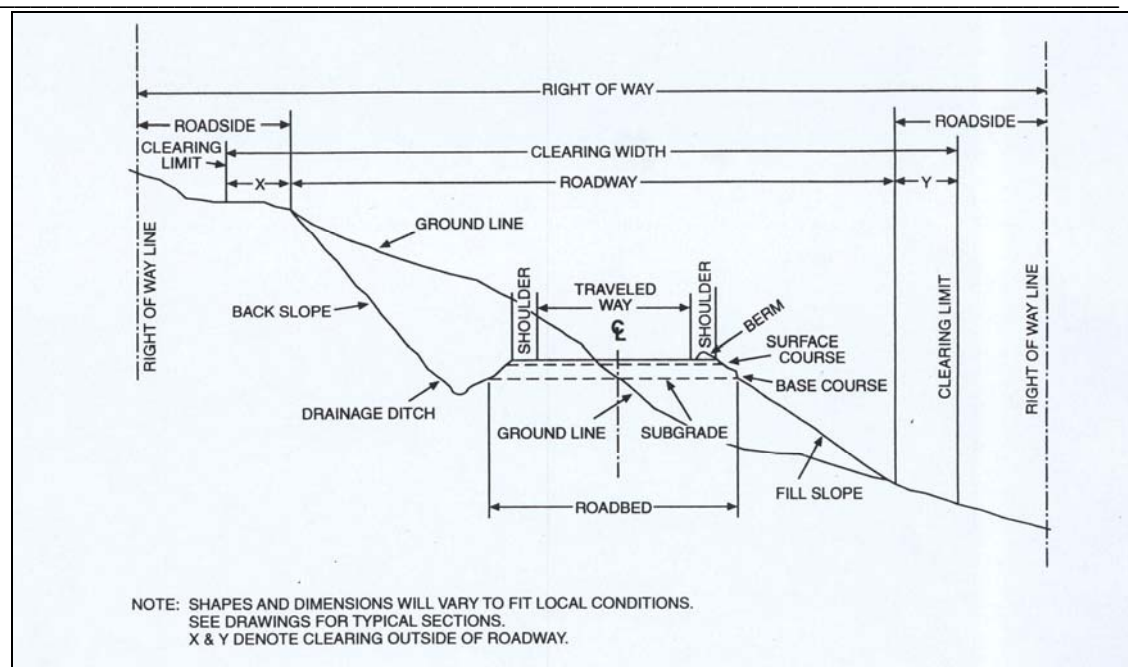


Figure 2-3. Design Components of “Cut and Fill” Road Construction

United States Department of agriculture Forest Service Engineering Staff Washington D.C. EN 7115-501-100 Revised October 1997; Roads - Self-Study Training Course Construction Certification Program; Chapter One, Basic Information, page 1-3

The distance of vegetative removal above and below road prism also depends on the hillside slope. The road is designed for safety, maintenance, and was marked by a BLM engineer and wildlife biologist to minimize resource impacts. For example, the useable road width was reduced from the requested 17 ft to the BLM’s recommendation of 14 ft. The clearing widths would vary, and resource impacts are analyzed at 40-60 feet; actual clearing widths may fall within that range, or be slightly less. To minimize sedimentation the road would have an outslope design and water bars during periods of non-use.

Since the road would have grades of 14%-16% at some locations and is native surface, a gate would be installed to limit access at the start of the new road prior to October 15, of the first operating year, as another measure to reduce sedimentation caused by public traffic. The gate would be purchased, installed, and maintained by Perpetua Forests Company commensurate with its designated use.

Merchantable trees removed for road construction within the 40-60 ft right-of-way clearing limits would be sold pursuant to 43 CFR 2812.5-1.

The first 300 ft of road would be constructed with an excavator. The excavated material would be end hauled and disposed of in any of the following four sites:

- Board Tree Quarry (T33S-R5W-Section 18) approximately 1.5 miles from construction activities.
- At the end of the 33-5-7 road - on the road surface - (T33S-R5W-Section 18) approximately 2.5 miles from construction activities.
- An existing skid trail located in a saddle which the new road would cross. The saddle and skid trail are located approximately 338 feet from the 33-5-18 road on the proposed new road location. End haul material could be placed along this existing skid trail where the new road would cross it. End haul material would be feathered out along the skid trail.
- Approximately 0.75 road miles east of the 33-5-7 and 33-5-18 road junction, end hauled material would be deposited on a 13% slope ridge top extending 100 ft north beyond the road turnout radius.

Moving material to the quarry would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road.

2.3.1 Project Design Features for Road Work

Project design features (PDF) are specific measures included in the design of the Proposed Action to minimize adverse impacts on the human environment. Many project design features for projects in the Medford District are specified in the RMP and may not be repeated in this revised EA. These include Best Management Practices (BMP) as described in Appendix D of the RMP.

Cultural Resources

- If cultural resources are found during project implementation; the project may be redesigned to protect the cultural resource values present, or evaluation and mitigation procedures would be implemented based on recommendations from the resource area archaeologist and concurrence by the Glendale Field Manager and State Historic Preservation Office.

Wildlife

- Road construction activities that produce loud noises above ambient levels, or produce thick smoke that would enter the stand, will not occur within 65 yards for chainsaw use or 35 yards for heavy equipment of any nest site or activity center of known pairs and resident singles or unsurveyed nesting, roosting, and foraging habitat between 1 March and 30 June (or until two weeks after the fledging period) – unless protocol surveys have determined the activity center to be not occupied, non-nesting, or failed in their nesting attempt. March 1 – June 30 is considered the critical early nesting period; the Authorizing Officer has the option to extend the restricted season during the year of harvest of ROW timber, based on site-specific knowledge (such as a late or recycle nesting attempt). The boundary of the prescribed area may be modified by the action agency biologist using topographic features or other site-specific information. The restricted area is calculated as a radius from the assumed nest site (point).
- If an active spotted owl nest or activity center is located within or *adjacent* to a project area, delay the project activity until September 30th or until an action agency biologist determines that young are not present. For a given situation, the “adjacent” distance is determined by the action agency biologist – if needed, contact Level 1 team for guidance. If any project activity is so close to a known or suspected owl site that the disturbance would flush a nesting spotted owl, curtail the project activity until September 30. The Authorizing Officer has the discretion to have surveys conducted and determine fledging activity.
- The Authorizing Officer has the option to extend the disturbance distance up to ¼ mile and the restricted season to as late as September 30, should the road construction extend beyond June 30, based on site-specific knowledge (such as a late or recycle nesting attempt). Road construction would occur after surveys have determined nesting and nest location status. The restricted area is calculated as a radius from the assumed nest site (point).
- If an active raptor nest or activity center is located within or adjacent to the Project Area, the road construction activities would be restricted between March 1 and July 15. For a x situation, the “adjacent” distance is determined by the action agency biologist but is generally considered to be one quarter of a mile. The Authorized Officer has the discretion to have surveys conducted to protocol.
- Trees would be felled towards the ROW clearing to avoid disturbance to adjacent red tree vole habitat areas.

Water Quality

- Road construction and drainage improvement would be permitted by the Authorizing Officer generally between May 15 and October 15 of the same year

to ensure soil-disturbing activities are completed before the rainy season. Additionally, if wet weather conditions occur during this period, log haul may be suspended by the Authorizing Officer if the occurrence of saturated road surfaces would result in rutting or erosion to the extent that water is being perpetually re-routed into tire tracks or away from designed drainage patterns.

- Should the constructed road be needed for hauling during wet conditions, the amendment to the reciprocal right-of-way agreement with Perpetua Forests Company would require durable rock of sufficient depth present across the road surface to prevent road damage, offsite erosion, or stream sedimentation as determined by the Authorized Officer. Durable rock would be from a BLM approved source. Currently the road condition for these roads are adequately surfaced for dry season or extended season hauling only.
- Road construction would consist of outsloping and upon completion of each use waterbars would be installed to disperse intercepted flow and runoff along the hillside, and to prevent rilling on the road surface. Waterbars must be constructed at an adequate depth to capture and divert all surface flow to an unobstructed outlet, without pooling.
- Exposed soil would be planted with native seed and mulched with certified weed-free mulch.
- Soil contaminated by excessive leakage of diesel, oil, hydraulic fluid and other hazardous materials as a result of equipment failure or human error would be removed from the site and disposed of in an approved site.
- Work would be temporarily suspended if monitoring indicates that rainstorms have saturated soils in the work area to the extent that there is potential for road damage or the potential for excessive stream sedimentation.
- Exposed soils, created during construction activities along either side of the constructed roadbed, would be mulched with certified weed-free mulch and planted with native seed by Oct. 15th to reduce the amount of material that would be prone to erosion.
- To reduce the risk of mass wasting potential due to over-steepened fill slopes, full bench construction would be employed. Excavated material from this portion of the road construction would be end hauled to any of the designated sites described Section 2.3.

Invasive Species/Noxious Weeds

- Heavy equipment would be washed prior to entering federal lands, removing soil and plant parts to prevent the spread of noxious weeds into the Project Area.

- If/when noxious weed treatment along the ROW occurs, only herbicides containing Glyphosate as the active ingredient would be used. Immediately (within 24 hours) after application, a Pesticide Application Record (PAR) would be completed and sent to the Glendale Resource Area Noxious Weed Coordinator.

Chapter 3.0 Affected Environment and Environmental Consequences

3.1 Introduction

In accordance with law, regulation, executive order, policy and direction, an interdisciplinary team reviewed the elements of the human environment to determine if they would be affected by the alternatives described in Chapter 2.0. Those elements of the human environment that were determined to be affected define the scope of environmental concern (**see Environmental Elements in Appendix 3 for full list of elements considered**). The Affected Environment portion of this chapter describes the current conditions and how they came to be. The relevant resources that could be potentially impacted are: special status wildlife species and critical habitat; and soils and water quality as the result of management activity.

The Environmental Effects portion of this chapter provides the analytical basis for the comparisons of the alternatives (40 CFR § 1502.16) and the reasonably foreseeable environmental consequences to the human environment that each alternative would have on the relevant resources. Impacts can be beneficial, neutral or detrimental. This analysis considers the direct impacts (effects caused by the action and occurring at the same place and time), indirect impacts (effects caused by the action but occurring later in time and farther removed in distance but are reasonably foreseeable) and cumulative impacts (effects caused by the action when added to other past, present and reasonably foreseeable future actions). The temporal and spatial scales used in this analysis may vary depending on the resource being affected.

As the Council on Environmental Quality (CEQ), in guidance issued on June 24, 2005, points out, the “environmental analysis required under NEPA is forward-looking,” and review of past actions is required only “to the extent that this review informs agency decision-making regarding the Proposed Action.” Use of information on the effects on past action may be useful in two ways according to the CEQ guidance. One is for consideration of the Proposed Action’s cumulative effects, and secondly as a basis for identifying the Proposed Action’s direct and indirect effects.

The CEQ stated in this guidance that “[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” This is because a description of the current state of the environment inherently includes the effects of past

actions. The CEQ guidance specifies that the “CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions.” Our information on the current environmental condition is more comprehensive and more accurate for establishing a useful starting point for a cumulative effects analysis, than attempting to establish such a starting point by adding up the described effects of individual past actions to some environmental baseline condition in the past that, unlike current conditions, can no longer be verified by direct examination.

The second area in which the CEQ guidance states that information on past actions may be useful is in “illuminating or predicting the direct and indirect effects of a proposed action.” The usefulness of such information is limited by the fact that it is anecdotal only, and extrapolation of data from such singular experiences is not generally accepted as a reliable predictor of effects.

Scoping for this project did not identify any need to exhaustively list individual past actions or analyze, compare, or describe the environmental effects of individual past actions in order to complete an analysis which would be useful for illuminating or predicting the effects of the Proposed Action

When encountering a gap in information, the question implicit in the Council on Environmental Quality regulations on incomplete and unavailable information was posed: Is this information “essential to a reasoned choice among the alternatives?” (40 CFR §1502.22[a]). While additional information would often add precision to estimates or better specify a relationship, the basic data and central relationships are sufficiently well established that any new information would not likely reverse or nullify understood relationships. Although new information would be welcome, no missing information was determined as essential for the decision maker to make a reasoned choice among the alternatives.

Western Oregon Plan Revisions are still in process and subject to change based on public comments and subsequent administrative remedies. They therefore provide insufficient information for meaningful consideration at this time. It is not the intent of the planning or NEPA processes to recalibrate all analyses of existing plan implementation actions whenever a new planning effort begins consideration of a broad array of management guidelines and alternative allocations at the programmatic scale. See *NAEC v. Kempthorne*, 457 F.3d 969, 979-80 (9th Cir. 2006) finding it lawful to consider the cumulative effects in the later broad-scale planning analysis.

Additionally, the purpose of this current proposal is to implement the existing Medford District Resource Management Plan (RMP). This revised EA has been prepared to determine if any significant environmental effects of the proposal are substantially greater than what has already been analyzed in the existing RMP’s programmatic EIS. The EIS associated with the current Western Oregon Plan Revision effort contains a cumulative effects analysis that incorporates these implementation actions (projected to occur under the existing plan as the “No Action” alternative and possible ongoing actions carried forward into the Action Alternatives), in a manner appropriate to the land use

planning scale. The Western Oregon Plan Revision EIS therefore serves as the appropriate vehicle for analyzing the cumulative effects of each land use alternative's management scheme. Any potentially cumulative effects of this proposal at the programmatic level that would be relevant to the proposed plan revision will be considered in that process.

The effects analysis of Perpetua Forests Company's private harvest tiers to the RMP which assumed that private lands would be extensively managed with an average rotation of 60 years. The analysis also assumes that Perpetua Forests Company would operate within the regulations of the Oregon Forest Practices Act (OFPA), including standards and guidelines designed to minimize project effects.

3.2 Noxious Weeds/Invasive Species

3.2.1 Affected Environment

The proposed Perpetua ROW located in T33S R5W Section 17 & 20 was surveyed for noxious weeds in the spring of 2006. One small population of *Senecio jacobaea* (Tansy ragwort), was documented directly adjacent to proposed ROW (Table 3-1). The population scantily extended up the existing road. However, this noxious weed species is not as much a concern as it once was, as the biological control (cinnabar moth which feeds on plant parts) has been very successful in reducing existing populations.

Table 3-1. 2006 Plant Surveys Revealing Noxious Weed Species in the Proposed Perpetua Right-of-Way Road Location

Location in Township (T), Range (R), Section (S)	Species	Coverage in Sq. Feet	Oregon Department of Agriculture Designation	Plant Description / Habitat Requirements
T33S R5W Section 17	Tansy ragwort	150	B*	Tansy ragwort, a biennial herb, requires sunlight and a disturbed site to establish. It is often found on roadsides, contributing to the spread of new infestations. Tansy ragwort will establish in disturbed sites including roadsides, pastures, and forested areas recently harvested for timber (Sweeney et al. 1992). The cinnabar moth (<i>Tyria jacobaeae</i>) is the biological agents effectively used to control tansy ragwort in Oregon, California, and Washington (Rees et. al, 1996).
Total Sq. feet		150		

* "B" designation; a weed of economic importance which is regionally abundant but which may have limited distribution in some counties. Where implementation of a fully integrated statewide management plan is not feasible, biological control shall be the main control approach (ODA, 2005).

Over the last 150 years activities such as motor vehicle traffic, recreational use, rural and urban development, timber harvest, road construction, and natural process have introduced and transported noxious weeds into the Rogue Valley. Noxious weeds are spread by the wind and by seed via attachment to vehicles and vectors such as humans,

animals, and birds, and are able to grow on suitable habitat (generally considered as any newly disturbed ground and/or an influx of light due to canopy removal). Since the 1970s a recognition that weeds were causing environmental damage resulted in the passage of State noxious weed laws, the Carson-Foley Act of 1968 – Plant Protection Act of 2000, and Presidential Executive Orders like Invasive Species E.O. 13112, which directs federal agencies to combat the noxious weeds on federal lands. Additional direction is provided by the Medford District RMP, which states the district is to “contain and/or reduce noxious weed infestations on BLM-administered land... (p. 92),” and “...survey BLM-administered land for noxious weed infestations... (p. 93).” These RMP directions for weed management are intended to be met at a landscape level; whether the direction is achieved is not intended to be measured at the site specific level nor with the implementation of each project. Thousands of acres of weed treatments have occurred on federal (and non-federal) lands over the last decade across the Medford District with the RMP-driven objective of containing or reducing – not eradicating - noxious weed populations (Budesza, 2006).

The public identified a concern regarding the potential risk of noxious weeds on BLM in T33S-R5W-Section 17 and Perpetua Forest Company’s parcel in T33S-R5W-Section 20 spreading onto the private property of Cabbage Lane in T33S-R5W-Section 20.

3.2.2 Environmental Consequences

Alternative 1 (No Action)

Under the No Action Alternative, noxious weeds within the Planning Area would continue to spread into suitable habitat at an unknown rate. The rate at which noxious weeds spread is impossible to quantify, as it depends on a myriad of factors including, but not limited to, logging on private lands, motor vehicle traffic, recreational use, rural and urban development, and natural processes (Northwest Area Noxious Weed Control Program EIS, p. 59). The following table (3-2) illustrates how each of these activities affects noxious weed dispersal.

Table 3-2. Factors Affecting the Determination of the Rate of Noxious Weed Spread

Activity	Role in Potential Noxious Weed Seed Dispersal
Private Land	Private lands host a perpetual source for noxious weed seed, which can be dispersed when seeds attach to tires, feet, fur, feathers or feces, or when natural processes such as wind and/or flooding events transport the seed from its source to another geographical vicinity.
Logging on Private Lands	Logging activity presents a key dispersal opportunity for noxious weed seeds per 1) attachment to tires/tracks of mechanized logging equipment, tires of log trucks, and various other logging-related substrates which subsequently transport the seed from its source to another geographic vicinity, 2) creation of openings for potential noxious weeds colonization and 3) a lack of PDFs – such as equipment/vehicle washing, etc. - which attempt to reduce the activity’s spread of noxious weed seeds.
Motor Vehicle Traffic (including Log Trucks)	Roads on public land include public use, which results in a plethora of seed-dispersing activities occurring on a daily basis. Private landowners use public roads to haul logs, undertake recreational pursuits, and/or access their properties. This

	transportation often occurs along BLM-administered roads, which are situated within a checkerboarded ownership arrangement. How or when seed detachment occurs is a random event could take place within feet or miles from the work site/seed source, presenting a high likelihood of detachment on public lands.
Recreational Use	The public often recreates on BLM-managed lands and can spread seed from their residences to public land in a variety of ways such as attachment to vehicle tires, hikers' socks, shoes, or other clothing, the fur of domesticated animals, etc.
Rural and Urban Development	Rural development occurring within the checkerboarded land arrangement often requires public landowners to acquire a Right-of-Way (ROW) from the BLM to legally access their parcel(s). These ROWs, or use of BLM-administered roads is often granted (Groves, 2006). Please refer to 'Motor Vehicle Traffic' and 'Private Land' for clarification of how this affects the spread of noxious weeds from private to public lands.
Natural Processes	Wind, seasonal flooding, and migration patterns of birds/animals are a few natural processes that potentially spread noxious weeds, especially from private land to public land. Wind carries seeds, and deposits them at random intervals. High water caused by flooding reaches vegetation (often harboring a noxious weed component) growing on the banks of rivers/creeks/streams, and deposits seeds downstream.

The more aggressive species are slated for treatment under Medford District's *Integrated Weed Management Plan and Environmental Assessment OR-110-98-14* across this District. However, the success of implementing the weed management plan would be temporary, as logging on non-federal lands, recreational use, rural and urban development, natural processes and vehicle traffic will continue to spread noxious weed populations into the Planning Area.

Indirect effects of noxious weed spread include the potential degradation of wildlife habitat (Rice et. al. 1997, Harris and Cranston 1979), a decline in natural diversity (Forcella and Harvey 1983; Tyser and Key 1988; Williams 1997), and decline in water quality (Lacey et al. 1989); however, a very small amount of land included in the ROW proposal (less than 0.25 acres) is covered by noxious weeds, resulting in immeasurable contributions to any potential decline in ecosystem health related to existing noxious weed populations, or to any additional noxious weed populations potentially established by the activities described in Table 3-2.

Alternative 2 (Proposed Action)

In the short term (approximately 1-5 years), proposed activities within the Planning Area would result in the reasonable probability of spreading noxious weeds. However, the rate at which this potential spread would occur is unknown due to the indistinguishable causal effect of other activities and factors listed in table 3-2 on the spread of noxious weeds. Openings, such as the proposed road construction, would provide suitable habitat for noxious weeds to colonize. In addition, during project implementation, increased vehicle traffic could increase, or at least perpetuate, weed infestations along road systems because of seed dispersal. Openings and disturbance provide the greatest opportunity for the establishment of noxious weeds. In an effort to address the potential for project activities to increase the rate of spread of noxious weeds, Project Design Features (PDFs) have been included in the project to decrease the potential spread of weeds associated with the proposed ROW. Project Design Features include washing equipment prior to

moving it on-site, operating vehicles/equipment in the dry season, using herbicide containing Glyphosate, and seeding newly created openings with native vegetation to reduce the potential establishment of noxious weeds. These PDFs are widely accepted and utilized as Best Management Practices (BMPs) in noxious weed control strategies across the nation (Thompson, 2006). Table 3-3 delineates the project design features and their expected implementation results.

Table 3-3. Project Design Features and Expected Implementation Results

Project Design Feature (PDF)	Result of Implementing PDF
Washing vehicles / equipment	Removes dirt that may contain viable noxious weed seeds, thereby reducing the potential for noxious weed spread
Operating vehicles/equipment during the dry season	Reduces the potential for viable noxious weed seed to be transported and dispersed via mud caked on the undercarriages/tires/tracks of logging equipment.
Seeding and/or planting newly created openings with native seed vegetation.	Introduces native vegetation to the site prior to noxious weed seed recruitment, allowing native plants an advantageous jump-start in reestablishment, which reduces the potential for noxious weed infestation.
Spraying herbicide (Glyphosate) prior to flowering	Kills noxious weed(s), and prevents seed spread.

Implementing the PDFs that reduce the potential spread of noxious weeds associated with the Proposed ROW, and using native species for seeding/planting newly disturbed openings is expected to result in a similar potential of noxious weed expansion as associated with the No Action Alternative. However, the restricted use of herbicides containing an active ingredient of Glyphosate along the ROW would be the most effective at reducing the potential risk of noxious weeds on BLM in T33S-R5W-Section 17 and Perpetua Forest Company's parcel in T33S-R5W-Section 20 from spreading onto the private property of Cabbage Lane in T33S-R5W-Section 20.

In the event of winter haul, durable rock of sufficient depth would be added to the top of the existing natural surface road. Winter haul is not likely to result in increased noxious weed spread, as the plants are relatively dormant (not growing/producing seed); compacted gravel is not a preferred germination substrate for weeds; and ground disturbing vehicles would still be required to be washed prior to entering the Project Area.

In the long term (5-100 years), tree canopies would eventually expand and reduce light levels, which in turn would prevent weeds from growing and expanding within treated areas, because populations decline as the amount of light reaching the plants diminishes. Consequently, in the long term, remaining weed populations would be confined to the road prism and adjoining (private) disturbed land as canopy is re-established in treated areas over time.

The effect of implementing Alternative 2 could possibly result in the establishment of new noxious weed populations. Although the *immediate* potential for weed spread would

be less with the No-Action Alternative than for the Proposed Action, the potential for the spread of existing noxious weeds and the introduction of new species is considered similar for both alternatives, because of the inclusion of PDFs in Alternative 2, and the fact that under the “no action” alternative, populations would continue to establish and spread due to seed transport by vehicular traffic, wildlife, and other natural dispersal methods listed in Table 3-2. Indirect effects associated with noxious weed population enlargement are similar to those mentioned in the No Action Alternative, and are known to include, generally, declines in the palatability or abundance of wildlife and livestock forage (Rice et al., 1997), declines in native plant diversity (Forcella and Harvey, 1983; Tyser and Key, 1988; Williams, 1997), reductions in the aesthetic value of the landscape, encroachment upon rare plant populations and their habitats, potential reductions in soil stability and subsequent increases in erosion (Lacey et. al, 1989), and an overall decline of ecosystem health. However, considering implementation of Alternative 2, there are three main reasons why potential weed establishment that might be caused by the Proposed Action is not expected to result in a detectable effect to overall ecosystem health. First, surveys indicate that a very small area (less than 0.25 acres) within the Planning Area is affected by noxious weeds. Second, the species residing at this site is not considered a priority species for manual treatment, as biological controls are effective at containing and eventually reducing the existing populations. Third, as aforementioned, Project Design Features (PDFs) have been established to minimize the rate at which project activities might potentially spread noxious weed seed from outside/adjacent sources.

Cumulative Effects

In order to address the cumulative effects of the Proposed Action on the spread of noxious weed encroachment, the condition of non-federal lands must be considered. However, there is no available or existing data regarding noxious weed occurrence on local non-federal lands. Therefore, for purposes of this analysis, BLM assumes that 1) there is a perpetual source of noxious/invasive weeds on non-federal lands that can spread to federal lands, especially when the land ownership is checkerboard, as within the Planning Area, and 2) conversely that noxious weeds are not established on these lands, and therefore there is a need to reduce the risk of spread of noxious weeds from the federal lands to the adjoining non-federal lands. Seeds are spread by the wind, by animal/avian vectors, natural events, and by human activities - in particular through soil attachment to vehicles. BLM's influence over these causes of the spread of noxious weeds is limited to those caused by human activities. Additional human disturbance and traffic would increase the potential for spreading noxious weed establishment, but regardless of human activity, spread of these weeds will continue through natural forces. Thus, the BLM cannot stop the spread of noxious weeds, it may only reduce the risk or rate of spread.

Given the unpredictable vectors for weed spread, such as the vehicle usage by private parties, wildlife behavior, and wind currents, it is not possible to quantify with any degree of confidence the rate of weed spread in the future, or even the degree by which that potential would be increased by the Proposed Action. Additionally, considering Perpetua

Forests Company's plans on logging the parcel directly adjacent to this portion of public land, the potential for weed spread is conceivably as great, if not greater, than the potential for spread in Alternatives 2 on BLM land.

Foreseeable activities within the Planning Area are expected to be similar to past and current activities: motor vehicle traffic, recreational use, rural and urban development, timber harvest, road construction, firewood collection. These types of activities could result in new disturbed sites available for colonization by existing noxious weed populations, and they do offer the possibility of introduction of new noxious weed species to the Planning Area under any alternative, including the no-action alternative. As stated above, there is no available or existing data concerning the rate of weed spread occurring on either federal or non-federal lands as a consequence of these types of activities. Also, as discussed above, there is no information on what, if any, increase in the rate of weed spread the Proposed Action will cause, and hence, it is not possible to quantify with any degree of confidence what the incremental effect of the Proposed Action on the spread of noxious weeds will be when added to the existing rate of weed spread caused by past, present, and future actions.

PDFs exist to reduce the potential that the Proposed Action would contribute to the spread of weed seed and establishment of new populations. PDFs are not intended or expected to completely eliminate any possibility that the Proposed Action would contribute to the spread of weed seed and establishment of new populations; however, PDFs ensure that any incremental contribution of the Proposed Action to the spread of weeds, when added to the rate of weed spread caused by past, present, and future actions, would be so small as to be incapable of quantification or distinction from background 6th field levels.

These PDFs are widely accepted as Best Management Practices (BMPs), as they are inexpensive to implement, easily attainable, and accomplish the objective of reducing the potential of spreading noxious weeds as a result of project-oriented activities.

There is no available data on the background rate of weed spread, and additional data collection on the rate of weed spread would not reduce the inherent speculation in predicting the future activities of private parties and wildlife and the resultant rate of weed spread. Further, additional data collection would not reduce the inherent speculation in predicting incremental effects of the Proposed Action on the spread of weeds because of (1) the unpredictable natural factors that largely determine whether weeds will spread after project activities, (2) the unlikelihood that future data collection would be able to detect or measure any difference between background rates of weed spread and the rate of weed spread as affected by the Proposed Action and correspondingly reduced by PDFs, and (3) the included PDFs that would reduce, if not eliminate, any project effects on the rate of weed spread that would make the already undetectable effects of the Proposed Action even more undetectable. Finally, further data collection on the rate of spread would not alter the PDF techniques already being applied to reduce that rate of spread. It cannot be over emphasized that under the No-Action Alternative, noxious weeds are likely to spread over time regardless of whether or not the

ROWs are granted, and that rate will not be altered to any detectable degree at the 6th field watershed level by the Proposed Action.

3.3 Soils and Hydrology

3.3.1 Affected Environment

This action is proposed within the 28,360 acre Wolf Creek HUC6 drainage, located within the approximately 104,400 acre Grave Creek HUC 5 watershed. In the area of the proposed road construction, soils are mapped as a Beekman-Colestine complex which is fairly deep, well drained, and typically has moderate permeability. The Josephine County Soils Survey (SCS 1983) identifies steepness of slope, hazard of erosion and compaction, and the difficulty of reforestation as the main concerns for this soil complex. Soils in this complex can be prone to rapid runoff that can lead to erosion where flows are concentrated as a result of slower permeability and moderately steep slopes. The proposed road construction and haul is located in the upper portions of the hillslope and along a ridge. Slopes within this Project Area are generally less than 40%, with only the first approximately 300 feet on the North side of the ridge exceeding this, at about 65%. There are no stream crossings or headwalls within, or adjacent to, the area of the proposed road construction.

Current Condition of Sub-Watershed

Currently approximately 1.7% (500 acres) of the Wolf Creek HUC 6 drainage is estimated to be compacted and non-productive for timber production, as a result of existing roads. Research indicates that changes in runoff timing may occur when roads occupy 3%-4% of the watershed (WPN, 1999). Road-caused changes in watershed hydrology are generally a result of reduced infiltration on compacted surfaces, more rapid routing of runoff in ditchlines, and the interception of surface and subsurface flows (Ziemer, 1981).

Road densities within the Wolf Creek HUC 6 drainage are currently at approximately 5.2 mi/mi². Road densities as a result of past road construction are currently above National Marine Fisheries Service (NMFS) recommended levels for properly functioning sub-watershed condition. The NMFS target established for proper functioning condition is 2 mi/mi², and above 3 mi/mi² is considered not functioning properly (USFWS/NOAA Fisheries Table of Population and Habitat Indicators, USDA et al. 2004). Roads in close proximity to streams, un-maintained or poorly maintained roads, and native surface roads used for winter haul, are the major ongoing sediment sources in these watersheds (USDI 1999). Currently about 43% of the roads within the Wolf Creek HUC 6 drainage are within 170 feet of a stream (USDI 1999). Un-vegetated ditchlines, road surfaces, and cross drains can all transport sediment. Oregon Department of Forestry monitoring data shows approximately one-third of private and state roads deliver sediment to streams via ditchlines, especially when used during winter hauling operations. A number of issues were identified to be contributing to the problem of sediment delivery to streams from these roads including; a lack of filtering prior to road drainage entering streams; to wide

of spacing between, or poor placement of, cross drainage structures; and a lack of rules to address turbidity caused by wet-weather hauling (ODF & DEQ, 2002). Most BLM roads in these watersheds are rocked, and when used for winter haul, are generally adequately surfaced to prevent excessive erosion and road damage. Natural surface roads on BLM lands are only used for log hauling during the dry season or under dry conditions as approved by the Authorized Officer.

Water Quality within the Wolf Creek HUC 6 is generally in fair condition. Aquatic habitat in fish streams within this sub-watershed is poor as a result of sedimentation, summer water temperatures, lack of large down wood in the channel, poor pool quality, high road density, and the location and integrity of riparian reserves (USDI 1999). There are two streams within the Wolf Creek HUC 6 drainage that are water-quality limited for temperatures above 64 degrees. Coyote Creek and Wolf Creek are listed on the Oregon Department Environmental Quality (ODEQ) 303(d) 2004/2006 Integrated Report as not meeting temperature standards for anadromous fish (<http://www.deq.state.or.us>). Though there is currently no standard for measuring sediment, fine sediment deposits within the substrate indicates that stream sedimentation is an issue within these sub-watersheds (USDI 1999). High temperatures and sedimentation within these streams are thought to be associated with naturally occurring factors such as: low summer flows; lower gradients and wide; shallow channels; and stream orientation that allows for maximum solar heating. Man-made factors that are thought to influence high temperature and sedimentation are natural surface and winter haul roads, diversions, grazing and areas of sparse or absent riparian cover resulting from agriculture, placer mining, gravel operations, and some non-federal logging operations. This, in some cases, can result in increased solar radiation where shade trees are removed, and a hydrologic connection between upland erosion and the stream channel.

3.3.2 Environmental Effects

3.3.2.1 Alternative 1 (No Action)

The proposed road construction across BLM would not occur under this alternative. Perpetua Forests Company would not have access to harvest the 80 acre parcel of land in T33S-R5W-Section 20 at this time, unless future access is acquired across non-BLM. Currently, other non-federal access has been denied.

Under this alternative, soil resources and watershed hydrology on BLM lands would remain in their present condition. The pattern of erosion and the existing sediment regime would be unaltered within this Project Area, since no road construction, and maintenance would occur on BLM land under this alternative. Road densities within the Wolf Creek HUC 6 sub-watershed, would remain at approximately 5.2 mi/mi² and would keep the amount of exposed soil potentially prone to erosion, compaction, and productivity loss, at existing levels. There would, therefore, be no change in the number of acres available for forest development on BLM in the future, and no contribution to changes in watershed hydrology from BLM lands.

3.3.2.2 Alternative 2 (Proposed Action)

On BLM land, this alternative would consist of constructing, continued use, and maintenance of 3,609 feet (0.68 miles) of a proposed road. The proposed road construction would begin on the north side of the ridge approximately 200 feet from the ridge top, and would then extend onto and over the ridge to the south side of the hillslope for the remaining 3,300 feet. On the south side of the ridge, the road is never more than approximately 500 feet from the ridge. Slopes on the south side of the ridge, where a majority of the construction activities would occur, are generally less than 35%. On the north side of the ridge where the first 300 feet of this road would be located, slopes exceed this, at about 65%. To mitigate for slope steepness, this first 300 feet would be full bench construction which would prevent excessive erosion, or any potential slumping issues. The material removed during construction would be end hauled to any of the following four sites: (1) the Board Tree Quarry in T33S-R5W-Section 18; (2) the end of the 33-5-7 road; (3) at a stable location on the 33-5-18 road (0.75 miles east of the 33-5-7 rd and 33-5-18 road junction); or (4) where the proposed road would intersect an existing skid trail on the saddle. End hauling this material to pre-approved, relatively flat locations would prevent excessive erosion and reduce the likelihood of slumping that can occur when side-casting or cut and fill construction techniques are used on steep slopes. There are no stream crossings or headwalls within the proposed construction area on BLM land. Additional Best Management Practices (BMPs) and Project Design Features (PDFs) would be used to minimize the amount of material eroded during the construction of this road. To minimize potential road damage and drainage problems that could lead to increased erosion, this road would be either restricted to dry season use, with waterbars and a gate installed upon completion of seasonal use to impede access during the winter months, or would be adequately surfaced with clean durable rock applied to the entire surface of the road at a depth sufficient to prevent road damage, alterations in designed drainage patterns, or fines being pumped up through the surfacing that would result in a muddy running surface. Additionally, if surfacing is applied adequate drainage structures would need to be installed that would continue to disperse, not concentrate flows, throughout the hillside. The proposed road would also be built using outsloped construction and a minimum safe running surface width of 14 feet. This would further reduce potential erosion by minimizing the area prone to increased surface runoff and by not concentrating flows within ditchlines and cross drains. Exposed soils, not including the road bed, would be mulched following construction, prior to the fall rains, to reduce the amount of material that would be prone to erosion. As a result of these BMPs and construction techniques, surface erosion would be expected to be slightly elevated above natural conditions, during road construction and hauling operations; however, since slopes throughout this Project Area have sufficient coarse ground cover, in the form of ground vegetation and/or down woody debris and fine overstory litter, and for the most part only of moderate steepness, eroded material would be expected to remain primarily onsite within the vegetation during the construction and use of this road. Consequently, no measurable additional sediment would be expected to reach the closest water source, an intermittent stream, approximately 250 feet downslope, or fish-bearing stream, approximately 1.9 miles downstream, due to the substantial distance from proposed activities on BLM land.

Use of any of the four possible disposal sites for excess material from end hauling would not result in measurable sedimentation. A perennial stream is adjacent to the Board Tree Quarry; however, end hauled material would be located on a relatively flat ground and would be placed as far from the stream channel as possible, at a distance of at least 100 feet. As a result of the nearly flat topographical features associated with this quarry, there would be no mechanisms for the waste material to enter the stream channel.

Additionally, PDFs would stabilize material, reduce winter rainsplash or water erosion, and keep any erosion onsite. Disposal of end hauled material at (1) the end of the 33-5-7 road; (2) off the 33-5-18.0 road; or (3) where the proposed road intersects an existing skid trail on the saddle are not expect to result in sediment entering stream channels because of the flat topographical features, proximity of these locations to streams, Project Design Features that reduce winter erosion, and a lack of any other routing mechanisms for waste material to enter stream channels. The 33-5-7 road disposal site is located on nearly flat ground, approximately 250 feet from the closest stream channel. Material placed at this site would be placed in the flat area at the bottom of the cutbank of the existing road to avoid any downslope routing mechanisms for the deposited material. The disposal site along the 33-5-18 road is located on a small ridge with about a 13% maximum slope. The closest stream to this site is over 400 feet away. The disposal site that is located on the skid trail of the ridge that the proposed road would extend over is on less than a 10% slope and over 200 feet from the closest stream. Hauling of excess material from the first 300 feet of full bench construction would result in small amounts of erosion on road surface, and locally in the area immediately downslope of the 33-5-18 and 33-5-7 roads. Small quantities of onsite erosion in the immediate surrounding areas around disposal sites would also occur. Small amounts of eroded material may enter streams from road ditchlines along the end-haul routes but would be of a magnitude to result in a visible increase in stream turbidity, or a measurable increase in the overall stream sediment deposition for more than 25 feet downstream within any stream channels. The overall effects of the proposed action on water quality would be within State of Oregon water quality standards and would not result in any measurable effects on macroinvertebrates or aquatic habitat.

The Proposed Action would result in soil disturbance on approximately 4 acres, from permanent road construction, removal of trees within the clearing limits of the road, and the 33-5-18 disposal site. Construction of the proposed road would permanently reduce the number of acres available for timber production on the BLM Matrix land allocation by approximately 1.2 acres, primarily due to productivity losses from the permanent deep compaction of the ground below the road surface. Additionally productivity would be temporarily reduced on up to 0.1 acres of the 33-5-18 disposal site, which is also located on BLM Matrix land, where compaction occurs as a result of dump truck access to the site. However, given the scope and location of the project, the Proposed Action is anticipated to have a negligible impact to soil productivity in Matrix lands at the sub-watershed scale. Productivity loss, compaction, and disturbance would all be well within the thresholds established in the Medford District RMP.

Road densities are above 5 mi/mi² within this sub-watershed. The National Marine Fisheries Service (NMFS) target established for proper functioning condition is 2 mi/mi². Above 3 mi/mi² is considered not functioning properly. Construction of this road would increase road densities by approximately 0.02% at the HUC 6 drainage scale. Additionally, road densities would remain below the 3-4% level that research shows is necessary for sub-watershed hydrology to be measurably altered. Additionally, since this road would be outsloped, no ditchlines would be built, and thus runoff timing would not be expected to be measurably increased.

All activities on federal land would be consistent with the standards and guidelines set forth under the Medford RMP EIS. Although the proposed action on BLM land would create a small effect at the site scale, it would be negligible at the HUC7 scale, and not detectable at the HUC 6 scale.

3.3.2.3 Cumulative Effects

In compliance with Medford RMP, a cumulative effects analysis for this project was completed at the HUC 6 sub-watershed scale. The following guidelines are provided for cumulative effects analysis, “To minimize detrimental impacts on water and soil resources resulting from the cumulative impact of land management activities within a watershed...Use the following general guidelines to delineate watersheds for cumulative effects analyses: Natural drainage boundaries, third to fifth order drainages (approximately 500 to 10,000 acres),”(USDI 1995, Appendix D, p. 153). Cumulative effects should therefore be written using a watershed delineated boundary that, as defined by acreage and stream order in the RMP, is at the HUC 7 or HUC 6 scale. This direction further states that this scale also needs to incorporate the entire project boundary to the lowest point at which a beneficial use could be affected. Therefore the cumulative effects analysis is scaled out from the project level HUC 7 scale, to the HUC 6 or HUC 5 watershed scale, until the point that any effects on water quality and other beneficial uses are no longer detectable. If a project has no detectable effects at the HUC 6 sub-watershed scale, then the project would not have detectable effects downstream at the HUC 5 watershed scale. As such, that project cannot incrementally add to effects occurring as a result of other projects in the HUC 5 watershed, no matter what the current condition of that HUC 5 watershed. Since this project is located within several HUC 7 drainages of the Wolf Creek HUC 6 sub-watershed, it is analyzed using a combination of past and proposed direct and indirect effects, as well as the foreseeable effects of any other current or potential future, federal or non-federal projects at the HUC 6 sub-watershed scale.

There are two perennial streams (Robinson Gulch and Foley Gulch) located within the 80 acre Perpetua Forests Company parcel to be harvested via the proposed 0.7 mile ROW road construction on BLM land. Foley Gulch flows into Robinson Gulch, which then flows into Coyote Creek below the proposed harvest area. Perennial and intermittent tributaries of Foley and Robinson Gulch are also located within the potential harvest areas. Appropriate Riparian Management Areas (RMA) would be applied to these streams as guided by the Oregon Forests Practices Act. “Riparian management area

widths are designed to provide adequate areas along streams, lakes, and significant wetlands to retain the physical components and maintain the functions necessary to accomplish the purposes and to meet the protection objectives and goals for water quality, fish, and wildlife set forth in OAR 629-635-0100,” (ODF, 2004).

Additional private harvest would be expected to continue to occur at current rates. Under this alternative, Perpetua Forests Company would proceed with timber harvest activities on private lands in the Project Area. Perpetua would have access to their land from the proposed new 3,609 ft road located near the ridge above their land (BLM land). Specific ground disturbance locations on private land relative to Coyote Creek within the harvest unit, are unknown, and it is not known in which portions, or to what extent, tractor yarding would be used under this alternative. Therefore, the amount of disturbance, subsequent erosion and increase in road density is uncertain. However, it can be assumed that Perpetua would tractor yard as much ground as possible from the new spur road. According to Sidle (1980) tractor yarding contributes 20% more disturbed ground than high-lead cable yarding (35% for tractor logging compared to 15% for cable). Thus, the amount of erosion and sediment produced as a result of the proposed private action would be relative to the method of harvesting used. However, harvest activities during this rotation would take place during the dry season (May 15-Oct 15) which would reduce the degree of soil disturbance, and as a result, the amount of erosion available to be transported downslope and into streams. The RMP also acknowledges that land use practices on private may contribute to sediment deposition and that erosion and turbidity may continue to occur (USDI 1994, p. 4-66). As stated in the RMP EIS (p. 4-16) “increases in turbidity and sediment resulting from surface disturbing activities tend to diminish as disturbed areas stabilize and revegetate. This typically takes anywhere from 1-3 years, but can potentially be longer if soil resources have been highly degraded or compacted. It is expected that all operations would not exceed the assumptions in the RMP EIS and would be in compliance with OFPA regulations to reduce erosion and minimize sediment delivery to streams.

Currently, road densities within the Wolf Creek HUC 6 sub-watershed are at approximately 5.2 mi/mi². Road densities as a result of past road construction are currently above NMFS recommended levels of 2 mi/mi² for properly functioning sub-watershed condition (NOAA 2004). Based on mapped road locations approximately 2% of the Wolf Creek HUC 6 drainage is estimated to be compacted as a result of existing roads. Alternative 2 does not appreciably increase road density on BLM land within the Wolf Creek HUC 6 drainage (an increase of 0.68 road miles, or less than 0.02%) and would not be expected to result in measurable stream sedimentation. Currently, there are no other planned future projects on federal ground that would result in an increase in road acres within the Wolf Creek HUC 6 drainage. The Five Rogues Timber Sale EA will result in approximately 0.5 miles of temporary road building, however since these roads will be decommissioned after use, they are not included in permanent road acre calculations. This will not result in an increase in road densities or long term erosion because all roads will be subsoiled using a winged ripper, which will immediately eliminate up to 80% of the compaction (Andrus and Froehlich, 1983) and restore nearly all hydrologic function. Following decommissioning these temporary roads will also be

seeded, mulched, and waterbarred as necessary, to minimize exposed soil, and therefore largely eliminate the erosion that would be expected to originate from these roads. None of the road construction, use, or decommissioning identified in the Five Rogues Timber Sale EA is expected to contribute sediment to streams because they are located on or near ridges several hundred yards from any stream.

Under the Proposed Action, future treatments to this section of private land would continue to use the proposed new road that would be constructed under this action. All future road use would follow the provisions set forth under this action for minimizing erosion, including seasonal use or adequate surfacing and drainage conditions. As such, the effects described under this action would not be exceeded by subsequent use of this road. Road construction would be expected to continue on non-federal lands as needed to provide access for private harvest activities on a 60 year rotation. These effects however are consistent with the Medford RMP which assumes some increases in compaction as a result of private harvest. On private land specific road, skid road, and landing construction length and locations are unknown, and it is not known to what extent cable yarding or tractor yarding would be utilized; therefore, the amount that road density on Perpetua Forests Company's land would increase is uncertain. Given past trends on private ground it would be expected that up to approximately 800 acres could be harvested on non-federal lands within this HUC 6 in the next 5 years. Some of these acres may require road spurs or short road segments to be constructed to allow access to these acres, however many of these acres have been harvested in the past and thus currently have existing roads for access. Even if road acres were increased by 50% (up to 100 new miles) as a result of future access needs on private and public ground, road acres within this sub-watershed would remain below the 3-4% of road acres, which research indicates may result in measurable changes to hydrologic timing and peak flows. Since this would be an unrealistically high amount of new road miles that would be built in the foreseeable future, it would be logical to conclude that this project would not result in any measurable effects to hydrologic function or water quality even when assessed with other projects that have occurred, or could potentially occur within this HUC 6 drainage.

Because no riparian vegetation would be disturbed, construction of the spur road on BLM land is not expected to directly affect stream temperatures. However, timber harvest activities that remove canopy within the primary shade zone (as described in NWFP TMDL Implementation Strategies, Feb. 2005) would result in increases in solar exposure and stream temperature. As assumed in the RMP EIS (p. 4-18), stream water temperatures are directly influenced by non-BLM administered lands. On private ground Riparian Management Areas (RMAs), are designed to minimize the increase in solar radiation exposure and subsequent increases in stream temperature.

Past activities, including 5,065 acres of harvest, and 229 miles of existing roads, have resulted in reduced and loss of productivity on approximately 4% of land within the Wolf Creek HUC 6 drainage. Private harvest and road construction would be expected to result in further losses to productivity on private land. The Five Rogues Timber Sale EA will also reduce productivity on approximately 25 acres as a result of approximately 665 acres of timber harvest, landings, and roads. Productivity loss as a result of this Proposed

Action would be minimal, and would be expected to have only a negligible (less than 0.05% of Matrix land allocation) impact on future timber volumes available for harvest on BLM Matrix land allocation in the future. Therefore this proposed road, when considering all other projects that have occurred, or will likely occur, within this HUC 6 sub-watershed, would not measurably affect soil productivity on federal lands. The combined effects associated with past, present, and future road construction, and use would not be expected to result in enough erosion to cause ODEQ water quality standards (turbidity) (available at www.epa.gov/waterscience/criteria/sediment/appendix3.pdf) to be exceeded because Oregon Forest Practices Act on non-federal lands, and the NWFP on federal lands, would be followed for all road construction activities, and these regulations were designed to keep projects in compliance with federal and state laws.

In conclusion, private actions would be consistent with OFPA standards and guidelines designed to minimize impacts to soils and water resources. Therefore, all effects, both private and federal, are well within expectations, and would not exceed the assumptions within the RMP EIS.

3.4 Special Status Wildlife Species (Threatened, Endangered, Sensitive) and Critical Habitat

3.4.1 Northern Spotted Owl (Threatened) and Critical Habitat

3.4.1.1 Affected Environment

The Planning Area is located within the Grave Creek Watershed, which contains a mixture of seral stages, including approximately 56% of mature and old-growth forest habitat in BLM ownership (28,147 out of 50,215 acres) used by northern spotted owls (USDI, 1999, p.48).

Northern spotted owl suitable habitat includes stands suitable for nesting, roosting, and foraging (NRF). There are two categories of suitable habitat. *Habitat 1* conifer stands satisfy the daily and annual needs of the owl for nesting, roosting and foraging. These stands generally have a multi-layered canopy with large trees in the overstory and an understory of shade tolerant conifers and hardwoods. Canopy closure generally exceeds 70%, and average diameter at breast height (dbh) is generally 21 inches or greater. *Habitat 2* suitable habitat includes conifer stands with understory vegetation or coarse woody debris which provide roosting and foraging opportunities but lack the necessary structure for consistent nesting. These stands have less diversity in the vertical structure and canopy closure generally exceeds 60% and average dbh is 11- 21 inches. Dispersal (non-suitable) habitat includes conifer stands with trees greater than or equal to 11 inches dbh and canopy closure of 40-60%, and lack structure such as large down wood, snags, and multi-story layering. The proposed right-of-way location was field-reviewed to determine if it met the definition of suitable and/or dispersal habitat.

The Proposed Action area on BLM ownership (3.5 acres) includes many conifers greater than 11 inches dbh, scattered trees greater than 21 inches dbh, and canopy closure greater than 60% in some areas, and contains approximately 1 acre of suitable northern spotted owl habitat. The suitable habitat is unlikely to be used for nesting, as the ridge top habitat is not typically selected for nesting, and surveys in the Klamath Demographic Study Area since 1988 have not detected any spotted owl nesting in the Project Area. There is also 2.5 acres of dispersal habitat present within the Project Area.

There are 2 spotted owl sites (Board Tree East and Foley Glen) with home ranges (1.3 mile radius from an active owl nesting site or historical activity area) within the proposed road construction. These sites were identified prior to the signing of the Northwest Forest Plan (NWFP) and contain 100 acres to be managed for late-successional characteristics. Board Tree East is within approximately 0.5 miles of the proposed road construction and annual demographic surveys last determined occupation in 1999. Foley Glen is within 1 mile and surveys last determined occupation in 2000. Barred owls have been documented at the Board Tree East and Foley Glen spotted owl site since 1999.

Extensive harvesting on BLM lands occurred in the Planning Area (HUC 6) prior to the 1990 listing of the spotted owl, and the implementation of the NWFP in 1994. Harvesting on private lands continues to be extensive. Most private land has been intensively harvested, much of it in the last few decades (Medford Change Detection, Five Rogues EA (EA#OR118-05-007), and trend analysis). The majority of the habitat on the private land (approximately 80 acres) accessed by the proposed ROW is typical of dispersal habitat, with occasional larger trees. It may provide some nesting opportunity, but primarily provides roosting, foraging and dispersal habitat, and lacks the complex structure found in the older stands on BLM.

The Perpetua Forests Company Right-of-Way Road Construction is located in the USFWS Section 7 Rogue-Middle Section 7 watershed which encompasses the Grave, Evans, Rogue River-Gold Hill, Rogue River-Grants Pass, Jumpoff Joe, Rogue River-Hellgate Creeks 5th field watersheds. The baseline suitable (nesting, roosting, and foraging) habitat for this Section 7 watershed is 88,774 acres (USDI-USFWS 2007, p.10). The U.S. Fish and Wildlife Service analyzed incidental take of northern spotted owls by determining disturbance to nesting owls and the removal, downgrading, or maintenance of all suitable and dispersal habitat for the spotted owl within the Rogue-Middle Section 7 Watershed. *Maintained suitable or dispersal habitat* maintains the components of spotted owl habitat within a stand, such that spotted owls continue to have their life history requirements supported (i.e. the functionality of habitat for use by spotted owls remains intact post project activity). For spotted owl dispersal-only habitat, a 40 percent canopy cover along with other habitat elements (including snags, down wood, tree-height class-diversity, and older hardwoods) will be maintained post project activity that adequately provide for spotted owl dispersal. A *downgraded* suitable habitat, decreases the quality of suitable habitat to the point it is no longer used for nesting/roosting/foraging, but may be used for dispersal. For example, because of decreased cover and increased metabolic demands or fewer prey items, spotted owls may have a lower survival rate when migrating through the area and its quality is degraded.

Since dispersal habitat is generally considered the lowest quality of habitat still useable by the species, dispersal habitat that is downgraded is no longer considered habitat. Thus, downgrading dispersal habitat is generally considered equivalent to *removing the dispersal habitat*.

The function of Matrix lands is to serve as connectivity between late-successional reserves (p. B-43, USDA/USDI 1994). Prior to January 1994, owl sites received a 100 acre residual habitat area. Owl sites found after January 1994 receive no mandatory protection, except for the nest tree and seasonal operating restrictions. The reduction of suitable habitat and degradation to owl sites in Matrix and private lands is within analysis criteria of the NWFP. A shift to increasing numbers of owl sites in maturing Late Successional Reserves is expected to contribute to the recovery goals and conservation needs of spotted owls, through providing multiple clusters of breeding spotted owls. Demographic data from northern spotted owls in the Klamath Demographic Study Area collected from 1985-2003 indicate that populations appear to be stable in the Klamath study area as a result of high survival and number of young produced over the period of the study.

The Bureau of Land Management (BLM), U.S. Forest Service (USFS), and US Fish and Wildlife Service (USFWS) have conducted a coordinated review of four recently completed reports containing information on the northern spotted owl (NSO). The reviewed reports include the following:

- *Scientific Evaluation of the Status of the Northern Spotted Owl* (Sustainable Ecosystems Institute, Courtney et al. 2004);
- *Status and Trends in Demography of Northern Spotted Owls, 1985-2003* (Anthony et al. 2004);
- *Northern Spotted Owl Five Year Review: Summary and Evaluation* (USFWS, November 2004); and
- *Northwest Forest Plan – The First Ten Years (1994-2003): Status and trend of northern spotted owl populations and habitat, PNW Station Edit Draft* (Lint, Technical Coordinator, 2005).

Although the agencies anticipated a decline of NSO populations under land and resource management plans during the past decade, the reports identified greater than expected NSO population declines in Washington and northern portions of Oregon, and more stationary populations in southern Oregon and northern California. The reports did not find a direct correlation between habitat conditions and changes in NSO populations, and they were inconclusive as to the cause of the declines. Lag effects from prior harvest of suitable habitat, competition with barred owls, and habitat loss due to wildfire were identified as current threats; West Nile virus and Sudden Oak Death were identified as potential new threats. Complex interactions are likely among the various factors. The status of the NSO population, and increased risk to NSO populations due to uncertainties surrounding barred owls and other factors, were reported as not sufficient to reclassify the species as endangered at this time.

The effects on NSO populations identified in the four reports are within those anticipated in the RMP EIS, and that the RMP goals and objectives are still achievable in light of the information from the reports (BLM, 2005).

Northern Spotted Owl Critical Habitat

The Planning Area lies entirely within Critical Habitat Unit #OR-32. Critical Habitat for the northern spotted owl is identified in the FY06-08 Biological Assessment (Appendix B) and was designated in *Federal Register* 57 (USDC 2002) and includes the primary constituent elements that support nesting, roosting, foraging, and dispersal. Designated Critical Habitat also includes forest land that is currently unsuitable, but has the capability of becoming suitable habitat in the future (FR57 (10):1796-1837).

Primary constituent elements of spotted owl critical habitat *are those physical and biological attributes that are essential to species conservation. In addition, the Act stipulates that the areas containing these elements may require special management consideration or protection. Such physical and biological features, as stated in 50 CFR 424.12 includes, but are not limited to the following:*

- Space for individual and population growth, and for normal behavior;*
- Food, water, or other nutritional or physiological requirements;*
- Cover or shelter;*
- Sites for breeding, reproduction, rearing of offspring; and*
- Habitats that are protected from disturbance or are representatives of the historic geographical and ecological distribution of the species.*

Critical Habitat Unit OR-32 coincides with the Rogue-Umpqua Area of Concern, which provides an essential link in connecting the Western Cascades Province with the northern end of the Klamath Mountains Province as well as the southern portion of the Coast Range Province (USDA/USDI 2006, BA, App. B-18). The land ownership patterns elevate the importance of maintaining owl nesting habitat to link the Western Cascades, Coast Ranges and the Klamath Provinces (USDA/USDI 2006 BA, App. B-18). Harvesting on private land has converted stands into early and mid-seral stages, which may not serve as suitable habitat. As a result of past events or actions removing and downgrading habitat in CHU OR-32, an estimated 35,165 acres of the 68,873 acre CHU, or approximately 51%, are currently suitable for nesting, roosting, and foraging habitat (USDA/USDI 2006 BA p.50).

3.4.1.2 Environmental Effects

Alternative 1 (No Action)

Under the No Action Alternative, no suitable or dispersal habitat would be removed on BLM land from road construction, and no habitat on the 80 acre parcel of Perpetua Forests Company's land would be harvested at this time. The proposed BLM action area and the private parcel would continue to provide habitat contributing to the productivity and dispersal of spotted owls using mature and late-successional habitat. The Project

Area may be reviewed under future right-of-way requests submitted to the BLM and subsequent analysis or future access may be granted from other private land owners, resulting in removal of suitable habitat on private land. Habitat on private would not be expected to remain and contribute towards maintenance or recovery trends for spotted owls.

Recent and foreseeable actions in Critical Habitat Unit #OR-32 that maintain habitat through harvesting and fuels/young stand treatment include Fizzy Stew, Healthy Murph and Starving Cow (677 acres NRF and dispersal maintained) [Middle Cow LSR Landscape Planning EA Project # OR118-05-022]. Spotted owl habitat analyzed for suitable habitat removal (198 acres), downgrade to a dispersal (367 acres), and dispersal habitat maintained (292 acres) in CHU OR-32 (Westside Project EA #OR-118-05-021) for foreseeable projects from the EA would maintain suitable and dispersal habitat conditions.

Recent and foreseeable non-commercial/small wood/hazardous fuels reduction projects occurring in CHU OR-32 that maintain critical habitat elements include Wolf Tree Upland Fuels (1,769 acres) [Wolf Tree EA #OR-110-01-036]; Grave Creek Fuels (1,200 acres) [Young stand Management and Fuels Reduction Treatments within the Grave Creek Watershed EA#OR118-03-004]; NCDM/ Small Wood/Hazardous Fuels (634 acres) [Slim Jim EA # OR118-04-014]; Westside Fuels (300 acres) [Westside Project EA #OR-118-05-021] and Eastside/Middle Cow fuels (2,500 acres) [Middle Cow LSR Landscape Planning EA Project # OR118-05-022]. Projects that maintain components of spotted owl habitat within a stand continue to have owl life history requirements supported. The functionality of habitat for use by spotted owls is maintained or would be improved after completion of the project.

The Board Tree East and Foley Glen spotted owls are likely to continue to be occupied by barred owls, which may have negative effects on spotted owl occupation and detectability (Olson et. al. 2005), and therefore the owls sites may be vacant of spotted owls, or occupied but undetected.

Alternative 2 (Proposed Action)

The ROW request from Perpetua Forests Company involves construction of approximately 0.7 miles of access road on BLM land in T33S R5W, Sections 17 and 20. The new road would be 60 ft wide for the first 300 feet, and 40 ft wide, with the exception of turnouts, turnarounds of radius curves that would require up to a 60 ft clearing width, for the remaining 3,609 ft. Approximately 6-8 trees (21 inches dbh or greater), 10-12 trees (15 to 20 inches dbh) and remainder of trees less than 15 inches dbh, would be removed within approximately 1 acre (1,000 ft of the ROW) of upper slope/near ridgetop suitable owl habitat for ROW access. Approximately 2.5 acres of dispersal habitat would be removed for the remainder of the ROW. The proposed road location was modified in the field with a BLM engineer and wildlife biologist to minimize the impacts to large suitable habitat trees. Due to topographical limitations, not all suitable trees would be avoidable. The ROW occurs in a young fire replacement stand

and intercepts the edge of a forest stand with residual older trees, and would remove 3.5 acres of critical northern spotted owl habitat (OR-32).

An owl site is considered viable if there is at least 40% within the 1.3 mile home range (Thomas et al. 1990 and Courtney et al. 2004) and 50% of the 0.5 mile radius core area (Wagner and Anthony 1998, Dugger et al. 2005, Zabel et al. 2003, Bingham and Noon 1997) is in suitable habitat condition, although some sites contain less than these percentages and remain occupied and productive. Under this methodology, any removal of spotted owl habitat is presumed likely to have adverse effects to the spotted owl within identified spotted owl home ranges. However, the effects of the habitat removal in relation to spotted owl sites depends on size, location, and configuration of removal, and in some cases may be beneficial where little diversification of habitat type occurs, such as woodrats inhabiting young forest stands and preyed upon by owls (Zabel et al. 1995).

Approximately 1 acre of suitable habitat and 2.5 acres of dispersal habitat would be removed within a 1.3 mile radius of the Board Tree East and Foley Glen owl sites which would remain above 40% (43.5% and 46.6%, respectively) federal suitable habitat. No change would occur within a 0.5 mile radius or 30 acre nest patch to Foley Glen. One acre of dispersal habitat removed and no change to the nest patch would occur within a 0.5 mile radius of Board Tree East which remains above 50% suitable habitat on federal land.

Demographic survey records show the adjacent owl sites as not nesting near the ROW. Protocol visits have not detected resident spotted owls in either Board Tree East owl site since 2000 or in Foley Glen since 2001, but have been occupied by barred owls since 1999. The sites may no longer be occupied by spotted owls or spotted owls may occur but be undetected (Olson et al. 1995).

The effects from the ROW road construction on suitable owl habitat in matrix land allocation are expected to be adverse, but not result in a measurable change in the use of forest stands by resident spotted owls due to the small quantity and narrow configuration of habitat removed, the quantity of suitable habitat within the owl sites above viable thresholds, and the possibility that the sites may be vacant of resident spotted owls and used territorially by only barred owls. However, the habitat is suitable for spotted owls, which may re-occupy the sites if the barred owls cease occupation.

The trees in the proposed ROW have functioned as foraging, roosting, and dispersal habitat for the Board Tree East and Foley Glen owl sites. It is expected that the narrow corridor removal of large trees and adjacent smaller trees would maintain opportunity for nesting, roosting, foraging, and dispersal in the effected stand. Nor are the effects expected to result in measurable impacts to the productivity or occupation of the adjacent spotted owl sites. Both of these conclusions are based on the fact that a near ridgetop/upper slope location: (1) is not likely to be selected for nesting or roosting, as owls typically use the lower two thirds of slopes for this (Blakesley et. al., 1992; Hershey et. al., 1998); (2) the opening created for the ROW would be limited to 40-60 ft wide and owls will disperse across roads and forage along edges, (3) most of the ROW is

in younger dispersal age habitat, (4) the quantity of suitable habitat within the owl sites are above viable thresholds, and (5) the sparse condition of large trees present and absence of spotted owl nest sites within ¼ mile since Glendale Resource Area began monitoring the owl sites in 1988.

The NWFP and RMP anticipated habitat modification and removal of habitat would continue on private as well as federal lands within the Planning Area. The remaining habitat on private land is not expected in the future to be suitable habitat, given a stand age rotation of 60 years (RMP/EIS, pp.4-5), but is expected to provide some dispersal habitat. The removal of habitat from private would reduce available habitat for spotted owls, and due to the checkerboard pattern of private and BLM ownership, remaining suitable habitat on BLM is widely spaced and results in large home ranges for spotted owls (Zabel, McKelvey, and Ward, 1995). If habitat quantity and suitable prey density resources are no longer adequate to support the productivity or occupation of the adjacent owls, owls may remain at the current sites or site selection may change, and owls may become less productive or owl sites may no longer be viable.

The Proposed Action is not expected to change the viability of the spotted owl as determined by the NWFP. The effects of loss, degradation, and disturbance to habitat are not greater than what was analyzed in the RMP (USDA/USDI 1994, p. 4-78) and NWFP (USDA/USDI 1994a, pp. 3&4 -211-234).

Cumulative Effects for the Northern Spotted Owl and Critical Habitat

Cumulative effects result from the incremental impact of the Proposed Action, added to other past, present, and reasonably foreseeable actions regardless of land ownership.

Extensive harvesting on BLM occurred within suitable habitat for the spotted owl prior to the 1990 listing of the spotted owl as a threatened species, and the implementation of the NWFP in 1994. The Grave Creek Watershed Analysis (p.51) notes that the late-successional stands in this watershed are highly fragmented and frequently isolated from other late successional stands because of the checkerboard pattern of federal land ownership and past logging practices. Harvesting on private lands continues to be extensive. Most private land has been intensively harvested, much of it in the last few decades (Medford Change Detection Satellite Imagery Program data 1974-2002, Five Rogues EA (EA#OR118-05-007, and trend analysis). Other activities, such as road construction, herbicide application, and fire have additionally contributed to the loss or degradation of spotted owl habitat.

Recent timber sale projects occurring in CHU OR-32 that remove or downgrade habitat include Coyote Pete and King Wolf (241 acres NRF Removed, 12 acres dispersal maintained) [Wolf Tree EA #OR-110-01-036]. There are no foreseeable actions removing or downgrading habitat. The approximate baseline amount of suitable and dispersal habitat after removal in NRF habitat (35,165 ac) and dispersal habitat (24,585ac) in CHU OR-32 was reported in the FY 06-08 Biological Assessment (p.50).

Recent and foreseeable actions that maintain habitat through harvesting and fuels/young stand treatment include Fizzy Stew, Healthy Murph and Starving Cow (677 acres NRF and dispersal maintained) [Middle Cow LSR Landscape Planning EA Project # OR118-05-022]. Spotted owl habitat analyzed for suitable habitat removal (198 acres), downgrade to a dispersal (367 acres), and dispersal habitat maintained (292 acres) in CHU OR-32 (Westside Project EA #OR-118-05-021) for foreseeable projects from the EA would maintain suitable and dispersal habitat conditions.

Recent and foreseeable non-commercial/small wood/hazardous fuels reduction projects occurring in CHU OR-32 that maintain critical habitat elements include Wolf Tree Upland Fuels (1,769 acres) [Wolf Tree EA #OR-110-01-036]; Grave Creek Fuels (1,200 acres) [Young stand Management and Fuels Reduction Treatments within the Grave Creek Watershed EA#OR118-03-004]; NCDM/ Small Wood/Hazardous Fuels (634 acres) [Slim Jim EA # OR118-04-014]; Westside Fuels (300 acres) [Westside Project EA #OR-118-05-021] and Eastside/Middle Cow fuels (2,500 acres) [Middle Cow LSR Landscape Planning EA Project # OR118-05-022]. Projects that maintain components of spotted owl habitat within a stand continue to have owl life history requirements supported. The functionality of habitat for use by spotted owls remains or would be improved after completion of the project.

The cumulative effects of removing 1 acre of 35,165 acres of suitable habitat and 2.5 acres of 24,585 acres of dispersal owl habitat from CHU OR#32 (FY 06-08 Biological Assessment (p.50) in a narrow strip near ridgetop when added to other past, present, and foreseeable activities would not measurably reduce the ability of the CHU to provide nesting, roosting, foraging, and dispersal habitat because the narrow corridor removal of scattered large trees interspersed with smaller trees would maintain opportunity for nesting, roosting, foraging, and dispersal in the effected stand, based on the fact that the near ridgetop/upper slope location: (1) is not likely to be selected for nesting or roosting, as owls typically use the lower two thirds of slopes for this (Blakesley et. al., 1992; Hershey et. al., 1998); (2) the opening created for the ROW would be limited to 40-60 ft wide and owls will disperse across roads and forage along edges, (3) most of the ROW is in younger dispersal age habitat, and (4) and absence of spotted owl nest sites within ¼ mile since Glendale Resource Area began monitoring the owl sites in 1988 indicates known nesting habitat within the stand would not be adversely affected.

The BLM completed informal consultation with the USFWS for the Proposed Action on BLM land, along with other projects that maintain spotted owl habitat. The Letter of Concurrence from the USFWS (USDI-USFWS 2007 p. 23) determined the effects to spotted owl, or designated spotted owl critical habitat to be “may affect, not likely to adversely affect” since the project implements the standards and guidelines of the Northwest Forest Plan and the District’s RMP and will incorporate the mandatory Project Design Criteria (Section 2.3.1).

3.4.2 Fisher (Bureau Sensitive, Federal Candidate)

3.4.2.1 Affected Environment

Fishers are secretive small mammals associated with closed canopy conditions in late-successional forests throughout its range in the western United States, often associated with riparian areas (Aubry and Houston 1992, Dark 1997). Jones and Garton (1994) noted that fisher do not use non-forested lands (<40% canopy cover). The fisher was analyzed in the NWFP and failed to pass the screens indicating likelihood of persistence (species viability screens) due to its dependence on interior forest habitat and large, down woody debris (USDA/USDI 1994a, Appendix J-2,).

Approximately 28,000 acres of the 50,215 acres of BLM administered lands within the 104,057 acre Grave Creek watershed are considered to be late-successional forest (USDI 1999). BLM checkerboard ownership may be one of the primary factors limiting the ability of BLM lands to provide optimal habitat for fishers (USDA/USDI 1994b).

The USFWS listed the west coast distinct population segment of the fisher under ESA in 2004, as warranted but was precluded due to other USFWS priorities (Federal Register April 8, 2004). The document further discloses that extant fisher populations in Oregon are restricted to two disjunct and genetically isolated populations in the southwestern portion of the State: one in the Siskiyou Mountains of the southwestern region and a reintroduced population in the southern Cascade Range. The fishers in the Siskiyou Mountains near the California border are probably an extension of the northern California population, and are believed to represent the northern extent of indigenous fisher populations in the Pacific states. Causes of historical population declines in the Pacific states include loss of habitat from logging, overtrapping, predator control, and urban and agricultural development. High intensity fires from fuels buildup could have also contributed to the loss of large conifers, live large trees with cavities, snags, and large down wood important to late successional habitat related species utilizing these features. Dispersal of fishers is also possibly restricted by large rivers and wide highways. There are no known sightings in the Glendale Resource Area. The nearest known sighting is approximately 15 miles away near Galice, Oregon, but it is possible that fishers may occur or disperse within the Planning Area. Powell and Zielinski (1994) generalized an average home range for fishers as 40 and 15 km² for males and females respectively. Habitat in the adjacent South Umpqua/Galesville Late Successional Reserve (LSR), which contains solid block ownership and extensive stands of older interior forest, could be used by fisher, and they could occupy or be dispersing through the Project Area.

Approximately seventy remote camera surveys were conducted to protocol (Zielinski and Kucera 1995) in 2002-2005 in the Glendale Resource Area, including stations in Sections 17, 18, and 9, with no fisher detections. BLM personnel have not had any incidental detections in the Glendale Resource Area.

The BLM ownership in the Project Area contains mature conifer forest with high levels of canopy closure, large snags, and down wood potentially suitable fisher habitat.

3.4.2.2 Environmental Effects

Alternative 1 (No Action)

Under the No Action Alternative, the Grave Creek watershed would continue to provide habitat poorly suited for fishers due to landscape fragmentation as a result of checkerboard ownership, continued harvesting and stand age rotation of 60 years on private lands (USDI 1994, p.4-5), past federal harvest, low quantity of large blocks of closed canopy and late-successional forest on BLM, low densities of large snags and down wood on BLM land harvested prior to the NWFP, and high road densities.

Approximately 80 acres of private and 3.5 acres of BLM forested landscape would not be harvested at this time, and would continue to provide poor forested conditions for fisher use. However, the opportunity to construct a road through BLM for private access could be explored as a viable option in the future, analyzed through a separate environmental analysis. The timber on this parcel of Perpetua Forests Company's land would remain unharvested unless other access becomes available. Disturbance from local residential people and vehicular traffic would continue and may deter the use of the stand by fisher. The BLM ownership would continue to be reviewed for potential forest management projects such as fuels reduction, thinning, and rotational harvesting or forest treatments and harvesting on private, that would alter stand conditions.

Alternative 2 (Proposed Action)

The Proposed Action would remove 1 acre of scattered old-growth remnant trees and 2.5 acres with diameters predominately 10-20 inches. The proposed ROW does not make any stand level changes to suitable BLM habitat, and the Grave Creek watershed is already in a high road density condition, with extensive BLM and private forest fragmentations. The removal of trees for a ROW would have a very minor and unmeasurable effect on the suitability of fisher habitat in the Project Area and in the Grave Creek watershed as there are no known sites or populations to be affected, and the ROW would not create any barriers to dispersal that would affect known sites or populations. Therefore it is not expected to contribute to the need to list the fisher as endangered or threatened.

This project would not change the assessment predicted in the NWFP (p.J2-54), which stated the fisher failed to pass the species viability screens due to its dependence on interior forest habitat and large, down woody debris.

Cumulative Effects to Fisher

Approximately 80 acres of younger private forest (with tree diameters approximately 10-20 inches) would be harvested.

The USFWS Section 7 Rogue-Middle watershed baseline suitable habitat is 88,774 acres. While this figure represents suitable owl nesting, roosting, or foraging habitat; its late-successional, closed-canopy conditions also act as an indicator of the relative amount of mature forest habitat available for fisher use. The cumulative removal and downgrading of suitable habitat from foreseeable projects in this Section 7 watershed is approximately 9,401 acres, or 10.6% of the baseline (USDA/USDI 2006 BA p.48).

The remaining forested habitat on private land is not expected in the future to be suitable for fisher use, given a stand age rotation of 60 years (RMP/EIS, p.4-5). The habitat on private has been previously entered for harvest, and most late successional habitat has been removed. The habitat provides the dense canopy utilized by fisher, but lacks the large down wood and the standing large trees that provide the large down wood. The removal of trees from private land would reduce foraging habitat and secure dispersal habitat, until dense canopy is regained in 30-40 years.

Due to the small size and isolation of late-successional forest units from previous harvesting on BLM Matrix land and private within the Planning Area, it is possible that the area may no longer be suitable for resident fishers. The largest late-successional blocks are expected to continue be restricted to LSRs. With the cumulative effects of private harvesting, road construction, low BLM ownership, and few large patches of BLM late-successional habitat at low elevations, combined with the fisher's natural rareness and slow re-colonization rates of restored habitats; the species is not expected to be well distributed throughout its range. The fisher was analyzed in the NWFP and failed to pass the species viability screens due to its dependence on interior forest habitat and large, down woody debris (USDA/USDI 1994, Appendix J-2, p. 53, 470). This project would not change the trend predicted in the NWFP.

3.5 Red Tree Vole (Removed from Survey & Manage and Special Status from the FSEIS ROD 2007)

3.5.1 Affected Environment

As stated under Section 1.4 (Plan Conformance), the development and design of this project complies with the Northwest Forest Plan (NWFP) prior to the Annual Species Review process as the Glendale Resource Area conducted red tree vole surveys to comply with the Survey and Manage protocol and implement management recommendations in effect as of the 2001 ROD for Survey and Manage species whose range is in the Project Area. Under *the Record of Decision for the Final Supplement to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (FSEIS, 2007 and ROD, 2007), the red tree vole is a non-managed species, as it is not listed as a Survey and Manage or Special Status species.

Habitat for red tree voles is present throughout the Project Area. Large trees (<21 inches dbh) are scattered through a small portion (1 acre) within the ROW mixed with younger

trees (10-20 inches dbh). Most of the ROW (2.5 acres) is dominated by 5-15 inches dbh trees. The proposed ROW location is not optimal habitat for the red tree vole. Primary habitat for the RTV is generally forest stands dominated by multi-storied and single-storied conifer trees greater than 20 inches dbh (USDA/USDI 2000 p.377). Surveys were conducted in 2006, and 2 active nests were located adjacent to the Project Area. Surveys were conducted in 2004 in adjacent optimal habitat on BLM land in the Planning Area, with multiple RTV sites containing 2 or more active nests per site.

The majority of remaining older forest in this watershed is on public lands managed by BLM. Approximately 48% of the Grave Creek watershed is BLM ownership, and approximately 56% of BLM administered lands is considered to be late-successional forest (USDI 1999, p.48).

3.5.2 Environmental Effects

3.5.2.1 Alternative 1 (No Action)

Under the No Action Alternative, the Perpetua Forests Company ROW road construction proposal would not occur across BLM land at this time; therefore, 1 acre within late-successional habitat containing sporadic large trees capable of supporting persistent active nests and 2.5 acres of smaller trees with diameters 10-15 inches would not be removed. Development of late-successional forest habitat would continue on the 3.5 acres into late-successional conditions resulting in additional large trees with large stable branches capable of supporting multiple nests per tree. Active nest density would be expected to increase as habitat improves and provides a continuous overstory of late-successional trees. Private land is not expected to contribute to the stability of red tree voles. Perpetua Forests Company may continue to evaluate alternative access to this portion of their land. BLM ownership in the Project Area could be reviewed in future analysis for future timber sales or private access right-of-way requests that may remove suitable habitat in the Matrix land allocation.

3.5.2.2 Alternative 2 (Proposed Action)

The proposed road location was modified in the field with a BLM engineer and wildlife biologist to minimize the impacts to large suitable habitat trees. Due to topographical limitations, not all large trees would be avoidable. Approximately 6-8 large trees (>21 inches dbh) and 10-12 smaller trees (15-20 inches dbh) would be removed as result of the proposed road construction, suitable for supporting RTV nests. Large trees contain large branches capable of supporting nests, whereas smaller trees have less structure to stably support nests or are more easily predated upon. Surveys located one active nest in a large ponderosa pine in an area dominated by smaller fir trees, and one nest in a small 10 inch dbh fir in an area with no large trees. The active nest in the 10 inch dbh fir is in an area that is not suitable habitat, and is unlikely to persist in that tree.

The development of habitat areas for red tree voles are intended to provide a short-term measure for managing red tree voles, as well as taking into consideration other

management objectives. It is the intent of the RTV Management Recommendations to maintain a level of flexibility for interdisciplinary teams to provide management of the species in the context of other NWFP goals (IM OR 2000-086). Red tree vole surveys were conducted, and the road location was selected that would least impact large trees and meet road engineering standards. The proposed ROW location has been designed to minimize the removal of large suitable trees adjacent to the nest trees. As a result, the red tree vole nest trees located from surveys would not be removed. Construction of a road adjacent to the nests would be expected to reduce the function of the red tree vole habitat areas, and may reduce the preference or effectiveness of the adjacent nests by altering the microclimate conditions. Red tree voles may alter nest preference within existing alternate nests, build new adjacent nests within or adjacent to the current nest selection habitat area, or remain and continue to utilize the same nests. Red tree vole surveys in the Glendale Resource Area have observed active red tree vole nests immediately adjacent to roads, recently harvested timber stands, natural openings, and small habitat islands within surrounding unsuitable habitat. Red tree voles readily cross small openings, forest roads, and canopy gaps 33-66 feet wide while traveling between nest trees (USDI 2000, p. 8). The proposed ROW is therefore expected to reduce the function of habitat areas surrounding the two active sites by removing tree crowns supporting arboreal nesting, foraging, or movement, however the active sites may continue to persist.

Red tree vole surveys were conducted in 2004 on adjacent late-successional habitat (Five Rogues EA#OR118-05-007) and located red tree vole sites with multiple active nests per site, and represent sites contributing major support for red tree vole population persistence within Matrix land in the Grave Creek watershed. The proposed ROW location contains less than optimal habitat conditions, with sporadic large trees capable of supporting active nests but lacking a continuous late-successional canopy. Less than optimal habitat areas with 1-2 active nests do not provide major support for red tree vole population persistence, but may help maintain species distribution and connectivity (USDI 2000).

The implementation of two 10 acre habitat areas to comply with Management Recommendations for the RTV (IM-OR-2000-086) conflicts with Perpetua's ROW request, as removal of trees within the habitat area is necessary. A Non-high Priority Site (NPS) analysis process (BLM IB-OR-2001-273, BLM IM-OR-2006-047) was initiated on April 25, 2007 by the Glendale Resource Area Field Manager to evaluate RTV sites as Non-high Priority Sites and to ensure species persistence. The 2001 "Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines" provides several situations where specific projects may be exempted from the Standards and Guidelines. These provisions are varied, and are intended for very specific sets of conditions. The identification of Non-high Priority Sites (Standards and Guidelines, Page 10) is one such example. The process allows the local land manager to identify Non-high Priority Sites for Category C and D species on a case-by-case basis. This is an interim process until a Management Recommendation that identifies High Priority Sites is completed or the Record of Decision to Remove the Survey and Manage Mitigation Measure Standards and Guidelines from the Bureau of Land Management Resource Management Plans

within the Range of the Northern Spotted Owl is implemented. The USFWS has concurred that the 2 active nests meet the criteria for as Non-high Priority Sites. This designation allows tree removal within habitat areas surrounding the active nests, while maintaining species persistence at the Grave Creek 5th field watershed and survey area scale.

3.5.2.3 Cumulative Effects to Red Tree Vole

The majority of remaining late-successional in the Grave Creek 5th field watershed is on public lands managed by BLM. Approximately 48% of the Grave Creek watershed (104,084 total acres) is BLM ownership, and approximately 55% (29,000 acres) of BLM administered lands is considered to be unmodified late-successional forest (USDI 1999). The cumulative effects of foreseeable BLM projects and relatively short rotation harvesting on private land would remove approximately 950 acres of suitable red tree vole habitat and reduce landscape habitat continuity.

Private land is not expected to not contribute to the persistence of the red tree vole due to harvesting on a 60 year rotation (USDI 1994, p. 4-5) and provides mostly dispersal habitat. Approximately 80 acres of private land would be harvested via access from the proposed 0.7 mile road construction on BLM land containing predominantly smaller diameter (10-20 inches dbh) mid-successional mixed hardwoods and conifers, and scattered larger trees, and habitat suitable for supporting low densities of red tree voles. Reforestation in the private parcel would function primarily as dispersal habitat in approximately 30 years, and not support persistent nesting colonies of red tree voles.

Breeding habitat supporting stable populations is expected to occur primarily on federal land. Approximately 35% of the species range occurs on federal land, with 50% of the federal land occurring on LSRs or congressionally withdrawn areas (USDA/USDI 1994a, p. 474). Implementation of the NWFP ROD Standards and Guidelines (USDA/USDI 1994, p.C-5) and RTV Management Recommendations (USDI 2000) for known sites on federal land, within the Planning Area and the Grave Creek watershed, would maintain well distributed populations and dispersal habitat through existing late-successional habitat on Matrix land allocation, 100 acre reserve habitat areas, and Riparian Reserves. Implementation of managing known breeding colonies in Matrix with implementation of Riparian Reserves (USDA/USDI 1994a, p.475) would improve breeding and dispersal for red tree voles throughout their range, resulting in greater than 80% likelihood of habitat occurring with sufficient quality, distribution, and abundance to allow the species to stabilize, well distributed across federal land. Management of RTV colonies would provide better habitat in the Matrix land allocation until habitat in LSRs and Riparian Reserves achieve late-successional condition. The cumulative impacts are therefore not expected to affect the viability and persistence of red tree voles, as sites designated as Non-high Priority Sites would not be needed as a mitigation to improve or maintain breeding and dispersal for red tree voles.

Chapter 4.0 List of Preparers

The following individuals participated on the interdisciplinary team or were consulted in the preparation of this EA:

<u>Name</u>	<u>Title</u>	<u>Primary Responsibility</u>
Marlin Pose	Wildlife Biologist	Team Lead, Wildlife, Visual Quality
Michelle Calvert	Ecosystem Planner	NEPA
Dustin Wharton	Engineer	Transportation
Carl Symons	Right-of-Way Specialist	Right-of-Ways, Realty
Colleen Dulin	Hydrologist	Soils, Watershed, Riparian
Stephanie Messerle	Fish Biologist	Fisheries
Rachel Showalter	Botanist	Botany & Noxious weeds
Amy Sobiech	Archaeologist	Cultural Resources
Donni Vogel	Fire and Fuels Specialist	Fire Hazard and Fire Risk

Chapter 5.0 Public Involvement and Consultation

5.1 Public Scoping and Notification

5.1.1 Public Scoping

The Glendale Resource Area accepts public comment of proposed management activities through the quarterly BLM Medford Messenger publication. A brief description of proposed projects, such as Perpetua Forests Company Right-of-Way Road Construction Project, a legal location and general vicinity map are provided along with a comment sheet for public responses. The project was included in these quarterly publications beginning in fall 2005, and no public comments were received. The Perpetua Forests Company Right-of-Way Road Construction Project Environmental Assessment (EA#OR118-06-006) was released for public review on February 1, 2008. Public comments were accepted through February 28, 2008. The BLM received five public comment letters primarily requesting analysis of temporary road construction in comparison to the permanent road construction proposal and a narrower road clearing width, a ridgetop location, further disclosure of resource impacts from 300 ft of full bench road construction, and provide site specific mapping for review. As a result, the Glendale Resource Area has revised the EA and FONSI to address public comments. Also see Appendix 6 for BLM's response to EA public comments.

5.1.2 Revised Environmental Assessment Public Comment Period

The revised Environmental Assessment will be made available from March 24 to April 11, 2008 for public review. Notification of the comment period will include: the

publication of a legal notice in the Daily Courier, newspaper of Grants Pass, Oregon; and a letter to be mailed to those individuals, organizations, and agencies to those who provided comments on the Perpetua Forests Company Right-of-Way Road Construction Project (EA#OR118-06-006). Comments received in the Glendale Resource Area Office, 2164 NE Spalding Avenue, Grants Pass, Oregon 97526 on or before April 11, 2008 will be considered in making the final decision for this project.

5.1.3 Administrative Remedies

Administrative review of right-of-way decisions requiring National Environmental Policy Act (NEPA) assessment will be available under 43 CFR Part 4 to those who have a “legally cognizable interest” to which there is a substantial likelihood that the action authorized would cause injury, and who have established themselves as a “party to the case,” (See 43 CFR § 4.410). Other than the applicant/proponent for the right-of-way action, in order to be considered a “party to the case” the person claiming to be adversely affected by the decision must show that they have notified the BLM of their alleged injury through their participation in the decision-making process (See 43 CFR § 4.410(b) and (c)).

5.2 Consultation

5.2.1 United States Fish and Wildlife Service (USFWS)

A Non-high Priority Site (NPS) analysis evaluated two active red tree vole sites affected by the proposed ROW construction to determine if the RTV sites met the criteria for NPS rating. The USFWS has concurred that the two active nests meet the criteria for as Non-high Priority Sites, and release of the sites for other resource uses would not measurably change the distribution pattern of the remaining active RTV sites.

In accordance with regulations pursuant to Section 7 of the Endangered Species Act 1973, as amended, consultation with the USFWS concerning the potential impacts of implementing the Perpetua Forests Company Right-of-Way Road Construction Project upon the northern spotted owl was completed. The USFWS Letter of Concurrence stated that the effects of the Perpetua ROW may affect, but are not likely to affect the spotted owl or designated spotted owl critical habitat since the project implements the standards and guidelines of the Northwest Forest Plan and the District’s RMP and will incorporate the mandatory Project Design Criteria (USDI-USFWS 2007 p.23)

Since the Project Area is outside the natural range of the marbled murrelet on BLM land within the Project Area, no consultation is needed for this species.

Since no threatened or endangered plant species were found within the Project Area, no consultation is needed.

Instruction Memorandum No. 2003-142 states that initiation of Endangered Species Act consultation is limited to “proposed federal actions” that would have an effect on listed species. The proposed federal action does not include any private action on private land.

5.2.2 National Marine Fisheries Service (NMFS)

Consultation for the Endangered Species Act or the Magnuson-Stevens Act with NMFS is not needed as the Proposed Action would not affect listed species or their habitat.

Instruction Memorandum (IM) No. 2003-142 detailed policy for evaluating proposals for access to non-federal lands across lands administered by the BLM in situations involving compliance with the Endangered Species Act. The Interagency Agreement (IA) attached to the IM stated:

- “If BLM or the Forest Service has discretionary authority to issue or condition a ROW, the agency must determine whether the proposed federal action “may affect” listed species or designated critical habitat. If a “no effect” determination is made, ESA compliance is complete. This finding should be placed in the record and processing of the application may continue in accordance with agency authority.”

The IA also states “the proposed Federal action does not include any private action on private land.” Therefore in terms of the analysis for ESA, the federal action does not include the private actions of Perpetua Forests Company. Based on this IM and its attached IA, ESA consultation is not warranted for the proposed federal action because the federal action is a “no effect” to Southern Oregon Northern California coho and coho critical habitat.

The Magnuson-Stevens Act does not have a clause which requires consultation on actions connected to federal actions. Therefore, effects of the private timber sale actions do not need to be evaluated in terms of consultation needs for EFH.

5.2.3 State Historical Preservation Office

Required cultural surveys were completed for the proposed right-of-way location. The State Historical Preservation Office approved the clearance/tracking form for the Perpetua Forests Company Right-of-Way Road Construction Project. The form is contained within the environmental assessment case file.

5.2.4 Native American Tribal Consultation

The BLM Medford Messenger publication is sent to local federally recognized Native American tribes. A meeting with the Glendale Resource Area archaeologist and Cow Creek Band of Umpqua Indians was held June 15, 2006. The tribe was provided with a description and location of proposed project activities for the Perpetua Forests Company Right-of-Way Road Construction Project. The tribe did not identify any areas of

concerned within the proposed ROW road location across BLM land. No other tribes made contact with the Glendale Resource Area about the Perpetua Forests Company Right-of-Way Road Construction Project.

ACRONYMS AND GLOSSARY

Abbreviations:

ACEC	Area of Critical Environmental Concern
ACS	Aquatic Conservation Strategy
BA	Biological Assessment
BO	Biological Opinion
BLM	Bureau of Land Management
BMP(s)	Best Management Practices
BSO	Bureau Sensitive
CCH	coho critical habitat
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHU	Critical Habitat Unit
dbh	diameter at breast height
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FLPMA	Federal Land Policy and Management Act
FONSI	Finding of No Significant Impact
HUC	Hydrologic Unit Condition
IA	Interagency Agreement
LSR	Late Successional Reserve
LWD	Large Woody Debris
MAMU	marbled murrelet
NEPA	National Environmental Policy Act
NWFP	Northwest Forest Plan
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic & Atmospheric Administration
NPS	Non-high Priority Site
NRCS	Natural Resource Conservation Service
NSO	northern spotted owl
O&C	Oregon & California
ODEQ	Oregon Department Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODF	Oregon Department of Forestry
OFPA	Oregon Forest Practices Act
PDF	Project Design Feature
RMA	Riparian Management Area
RMP	Resource Management Plan

ROD	Record of Decision
ROW	Right-of-Way
RTV	Red Tree Vole
SHPO	State Historic Preservation Office
SONC	Southern Oregon/Northern California
S&M	Survey and Manage
SSS	Special Status Species
T/E	Threatened/Endangered
TSZ	Transient Snow Zone
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management

Air Quality. Refers to standards for various classes of land as designated by the Clean Air Act, P.L. 88-206, Jan. 1978.

Best Management Practices (BMP). Practices determined by the resource professional to be the most effective and practicable means of preventing or reducing the amount of water pollution generated by non-point sources; used to meet water quality goals (See Appendix D in RMP (USDI BLM 1995)).

Canopy. The more or less continuous cover of branches and foliage formed collectively by adjacent trees and other woody species in a forest stand.

Coarse Woody Debris. Portion of trees that have fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter.

Cover. Vegetation used by wildlife for protection from predators, or to mitigate weather conditions, or to reproduce. May also refer to the protection of the soil and the shading provided to herbs and forbs by vegetation.

Cross drains. Device or structure designed to remove water off the road surface and release it or disperse it off the edge of the road in a manner that minimizes effects to adjacent areas and the watershed.

Cultural resources. The physical remains of human activity (artifacts, ruins, burial mounds, petroglyphs, etc.) having scientific, prehistoric or social values.

Cumulative effect. The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can also result from individually minor, but collectively significant actions taking place over a period of time.

Diameter at Breast Height (dbh). The diameter of a tree 4.5 feet above the ground on the uphill side of the tree.

Dispersal Habitat. Dispersal habitat for the northern spotted owl consists of forest lands generally greater than 40 years of age with canopy closures of 40 percent or greater and an average diameter at breast height of 11 inches or greater. Spotted owls use dispersal habitat to move between blocks of suitable habitat; juveniles use it to disperse from natal territories. Dispersal habitat may have roosting and foraging components, enabling spotted owls to survive, but lack structure suitable for nesting.

Edge. Where different plant communities meet, or where variations in successional stage or vegetation conditions within the plant community come together.

Effects (or Impacts). Environmental consequences as a result of a Proposed Action. Effects provide the scientific and analytical basis for comparison of alternatives. Effects might be either direct (caused by the action and occur at the same time and place) or indirect (occurring later in time or at a different location, but are reasonably foreseeable or cumulative results of the action).

Effects and impacts as used in this EA are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or healthy effects, whether direct, indirect, or cumulative. Effects might also include those resulting from actions that might have both beneficial and detrimental effects, even if on the balance it appears that the effects would be beneficial.

Endangered Species. Any species defined through the Endangered Species Act of 1973 as amended, as being in danger of extinction throughout all or a significant portion of its range and published in the Federal Register.

Environmental Assessment (EA). A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of NEPA and is released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, CEQ guidelines, and directives of the agency responsible for the project proposal.

Erosion. Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is more rapid than normal, natural, or geologic erosion, primarily resulting from the activities of people, animals, or natural catastrophes.

Floodplain. The lowland and relatively flat area adjoining inland and coastal waters, including, at a minimum, areas that are subject to a one percent or greater chance of flooding in any given year.

Forage. Food available to animals for feeding. Habitat containing forage for predators is a source and hiding cover and/or shelter for prey species.

Forb. Any herb other than grass.

Fuels. Combustible wildland vegetative materials present in the forest which potentially contribute to a significant fire hazard.

Full bench construction. Road construction requiring full excavation of material to create the road prism and ditches, with end hauling the majority of excavated material an approved disposal site.

Hardwoods. A conventional term for broadleaf trees and their wood products.

Impacts. A spatial or temporal change in the environment caused by human activity. See effects.

Indirect effects. Secondary effects which occur in locations other than the initial action or significantly later in time.

Intermittent stream. Any nonpermanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

Mitigation. Mitigation includes (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (5) compensating for the impact by replacing or providing substitute resources or environments.

National Environmental Policy Act of 1969 (NEPA). This law requires the preparation of environmental impact statements for every major Federal Action which causes a significant effect on the quality of the human environment.

No-Action alternative. The No-Action Alternative is required by regulations implementing the National Environmental Policy Act (NEPA) (40 CFR 1502.14). The No-Action Alternative provides a baseline for estimating the effects of other alternatives. When a proposed activity is being evaluated, the No-Action Alternative discusses conditions under which current management direction would continue unchanged.

Non-attainment. Failure of a geographical area to attain or maintain compliance with ambient air quality standards.

Non-high Priority Site (NPS).- The Record of Decision (ROD) for Survey and Manage (S&M) Species (ROD and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines)

provides several situations where specific projects may be exempted from the Standards and Guidelines. These provisions are varied, and are intended for very specific sets of conditions. The identification of Non-high Priority Sites (Standards and Guidelines, Page 10) is one such example. A four-step process (BLM Information Bulletin-OR-2001-273, BLM Information Memorandum-OR-2006-047) allows the local land manager to identify Non-high Priority Sites for Category C and D species on a case-by-case basis and release habitat around survey and manage sites for other management. This is an interim process until a Management Recommendation that identifies high priority sites is completed, or until an environmental analysis is completed which changes the management status for the species and protection of the known sites is no longer required.

Noxious weeds. Rapidly spreading plants that can cause a variety of major ecological or economic impacts to both agriculture and wildland.

Outsloped construction. A road constructed without ditches and culvert relief pipes. The constructed road surface is sloped 2% - 3% towards the fill slope to drain water off the road surface.

Overstory. That portion of trees which form the uppermost layer in a forest stand which consists of more than one distinct layer (canopy).

Peak flow. The highest stream flow that occurs during a storm event.

Perennial streams. Streams that flow continuously throughout the year.

Regeneration. The renewal of a tree crop, whether by natural or artificial means. This term might also refer to the crop itself (seedlings, saplings).

Resource Management Plan (RMP). A land use plan prepared by the BLM under current regulations in accordance with the Federal Land Policy and Management Act. (See USDI, BLM 1995).

Rilling. A small channel cut in soil from water flow.

Riparian Reserves. Designated riparian areas found outside Late-Successional reserves.

Riparian habitat. Those terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial and/or intermittent water, associated high water tables and soils which exhibit some wetness characteristics. Normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs and wet meadows.

Road maintenance. The work required to keep a facility (road) in such a condition that it may be continuously utilized at its original or designed capacity and efficiency, and for its intended purposes.

Seral stages. The series of relatively transitory plant communities that develop during ecological succession from bare ground to the climax stage. Generally there are five stages recognized: early-seral, mid-seral, late-seral, mature-seral, and old-growth.

Sidecasting. Disposal location of excavated material when placed on adjacent slopes of constructed road. Areas are seeded and mulched with weed-free, native seed and mulch.

Snag. A standing dead tree usually without merchantable value for timber products, but having characteristics of benefit to cavity nesting wildlife species.

Soil compaction. An increase in bulk density (weight per unit volume) and a decrease in soil porosity resulting from applied loads, vibration, or pressure. Compaction decreases productivity by reducing water and nutrient holding capacity, root respiration, and microbial activity.

Stand. A community of trees or other vegetation uniform in composition, physiognomy, spatial arrangement, or condition to be distinguishable from adjacent communities.

Sub-watershed. In this document the term refers to the entire area that contributes water to a drainage system or stream at the sixth-field watershed scale (HUC 6). The sixth field watershed within the Perpetua Forests Company Right-of-Way Road Construction Project Planning Area is Wolf Creek.

Transient Snow Zone (TSZ). The area in which the winter snow pack is short-lived and transitory in nature (these areas normally do not have a substantial covering of snow for an entire winter season). Within our region this zone generally exists above 2,500 feet in elevation.

Trend analysis. Estimated annual rate of private harvest applied to the years 2003-2007 by averaging the annual private acres harvested through satellite imagery data since implementation of the Northwest Forest Plan (1994-2002).

Threatened Species. Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range, and which has been designated in the Federal Register as such. In addition, some states have declared certain species in their jurisdiction as threatened or endangered.

Understory. Vegetation (trees or shrubs) growing under the canopy formed by taller trees.

Water bars. A structure installed in the road surface to divert road surface water off of the road. Water bars are constructed from subgrade soil or other materials, such as rubber strips and timber.

Water Quality. The chemical, physical and biological characteristics of water.

Watershed. Entire area that contributes water to a drainage system or stream. The fifth-field watershed within the Perpetua Forests Company Right-of-Way Road Construction Project Planning Area is Grave Creek.

Water yield. The total volume of surface runoff, measured as stream discharge that leaves a sub-watershed area. Increased water yield is primarily a result of reduced evapotranspiration and interception within the watershed, and can persist for one to two decades following harvest activity depending on the rate of vegetative recovery. As forests regenerate, water yields generally decrease to pre-treatment levels within two to three decades.

Yarding. The act or process of moving logs to a landing.

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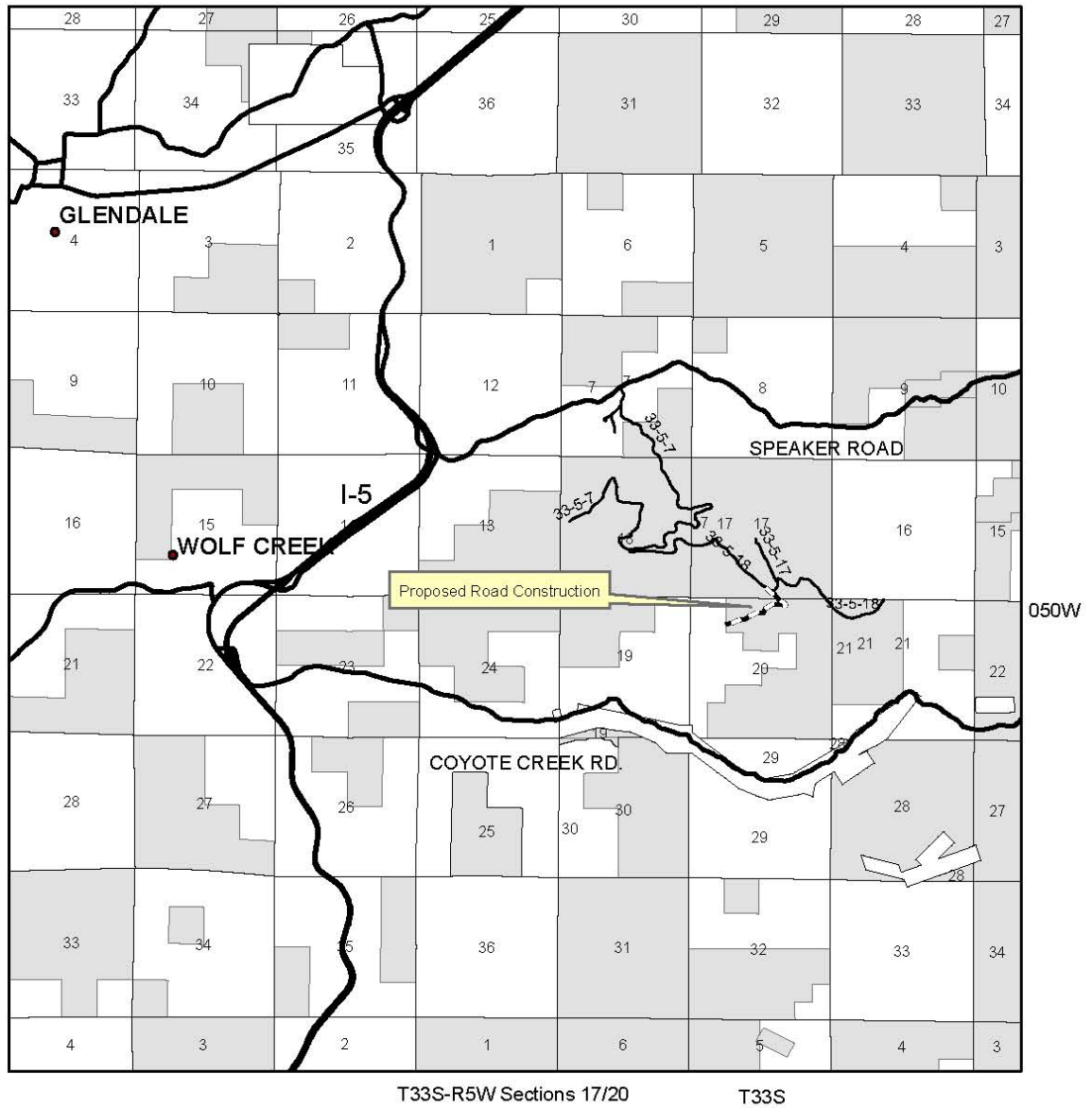
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APPENDIX 1 – PROJECT MAPS

Proposed Right-of-Way Construction for Perpetua Forests Company



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Prepared by: mpos
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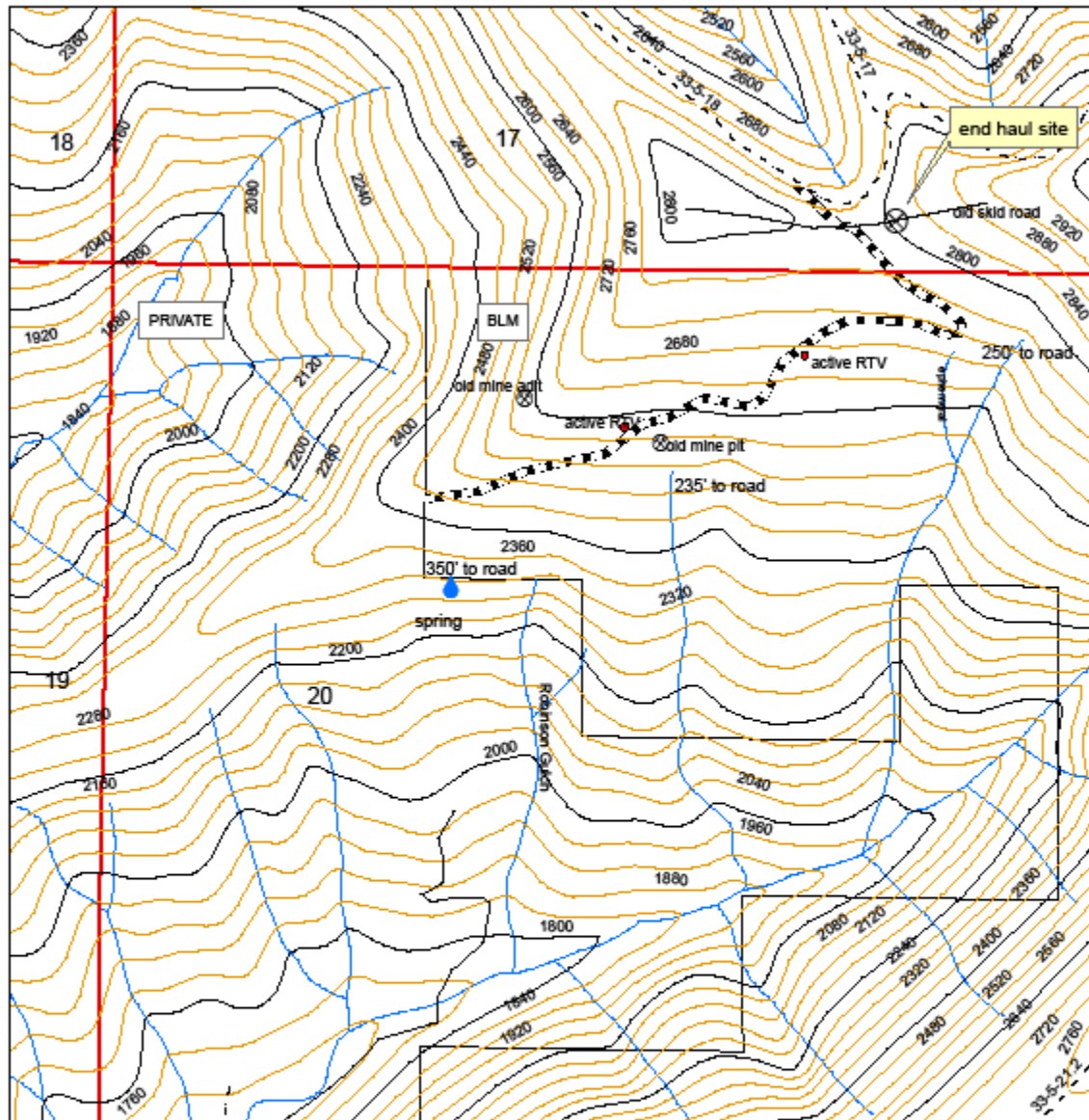
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Legend

- Cities
- major roads
- Proposed Perpetua road
- selected roads
- Sections
- BLM Ownership



Proposed Perpetua ROW Road Construction Project



T33S R5W Sections 17/20

0 150 300 600 900 1,200 1,500 Feet



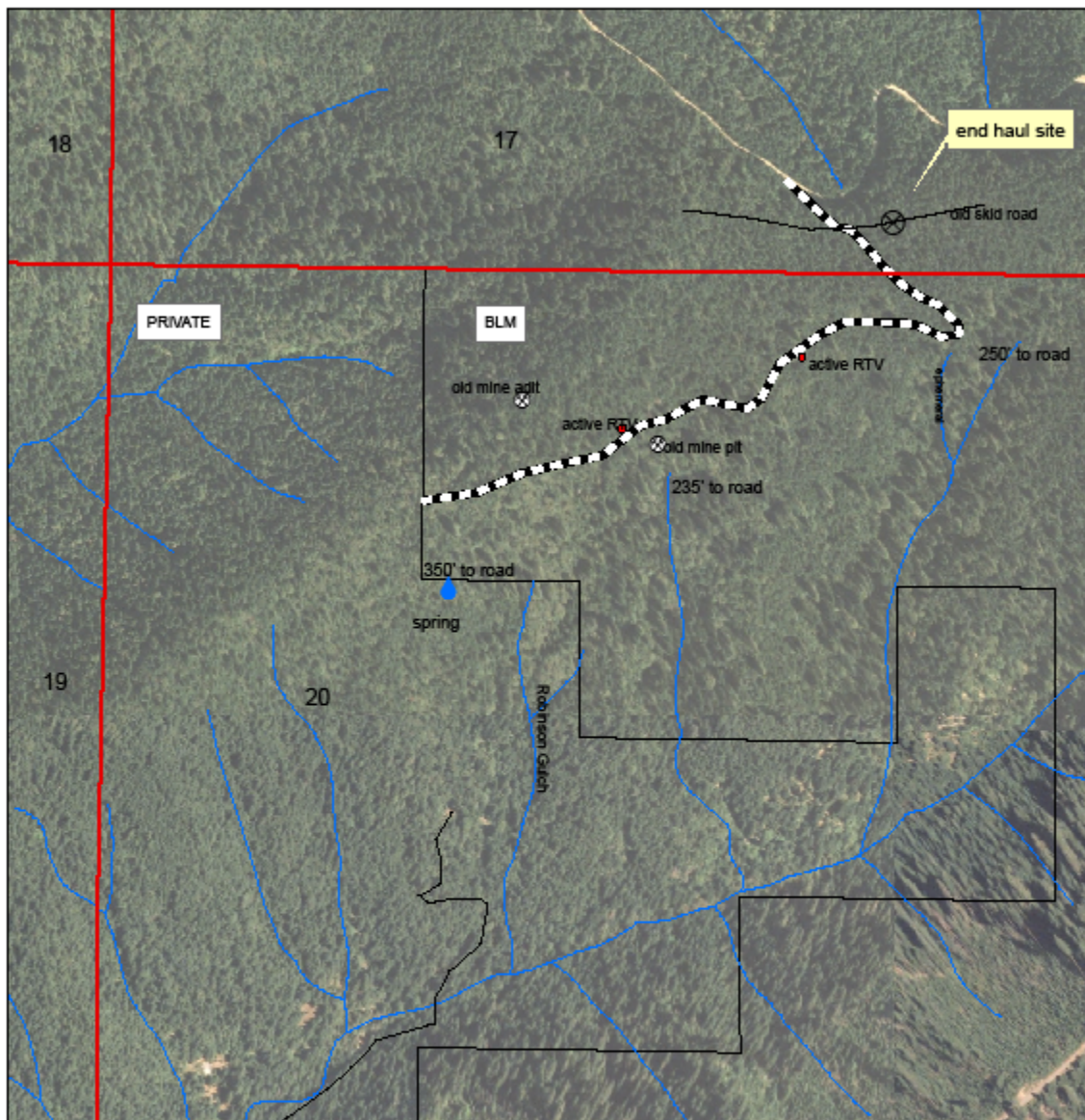
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- Legend**
- Active Red Tree Vole Site
 - roads
 - 40' contour lines
 - CONTOUR
 - 20'
 - 40'
 - sections
 - Proposed Perpetua ROW road construction
 - streams
 - BLM ownership



Proposed Perpetua ROW Road Construction Project



T33S R5W Sections 17/20

0 150 300 600 900 1,200 1,500 Feet



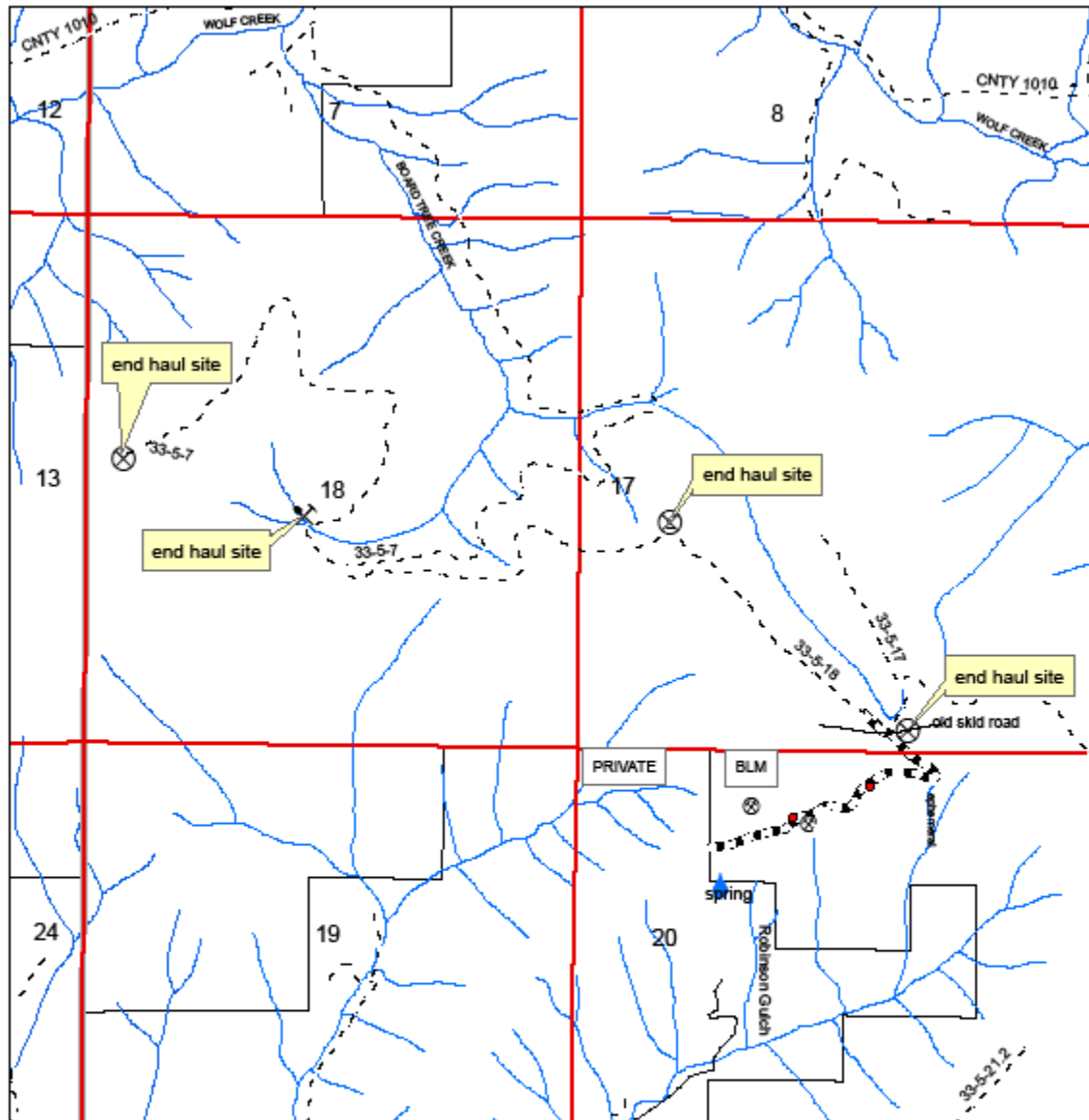
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated in future editions.

Prepared by: agos
Current Date: 05/17/2008 10:17:38 AM

- Legend**
- Active Red Tree Vole Site
 - sections
 - Proposed Perpetua ROW road construction
 - streams
 - BLM ownership



Proposed Perpetua ROW Road Construction Project End Haul Locations



T33S R5W Sections 17/20



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Prepared by: agross
Current Date: 05/17/2008 10:17:38 AM

- Legend**
- Active Red Tree Vole Site
 - roads
 - sections
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APPENDIX 2 - ALTERNATIVE DEVELOPMENT SUMMARY

Environmental Assessment Number OR-118-08-006

Pursuant to Section 102 (2) (E) of NEPA (National Environmental Policy Act of 1969, as amended), Federal agencies shall “Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” The CEQ (Council on Environmental Quality) regulations for implementing the procedural provisions of NEPA states, alternatives should be “reasonable” and “provide a clear basis for choice” (40 CFR 1502.14).

In light of the direction contained in both NEPA and the CEQ Regulations, the following questions were used to 1/ identify the alternatives to be analyzed in detail in this environmental assessment that are in addition to the “proposed action” and “no action” alternatives, and 2/ document the rationale for eliminating alternatives from detailed study.

- 1. Are there any unresolved conflicts concerning alternative uses of available resources? If yes, document and go to Question #2. If no, document rationale and stop evaluation.**

The Proposed Action occurs on Matrix land allocation. There are no proposed activities within the Late Successional Reserve under this project. The Northwest Forest Plan Standards and Guidelines state that at least 15% of fifth field watersheds should be managed to retain late-successional patches (USDA/USDI 1994, C-44.) Retention of late-successional habitat in the Grave Creek 5th field watershed (HUC 5) exceeds 15%; the Grave Creek Watershed contains 56% of mature and old-growth forest habitat in BLM ownership (28,147 out of 50,215 acres) used by northern spotted owls (USDI, 1999, p.48), therefore no unresolved conflict occurs with retention of late-successional habitat on Matrix land allocation.

The Glendale Resource Area received five comment letters from the public on the Perpetua Forests Company Right-of-Way Road Construction Project EA (EA#OR118-06-008). Requests for alternative development consideration included proposing temporary rather than permanent road construction, a narrower road clearing width, and an exclusive ridgetop location for the proposed road.

- 2. What alternatives should be considered that would lessen or eliminate the “unresolved conflicts concerning alternative uses of available resources”?**
List alternatives and go to Question #3. If no alternative is identified other than the “no action” alternative, document and stop evaluation.

No other alternative is identified other than the “no action” alternative. However, the useable road width was reduced from Perpetua Forests Company’s requested

17 ft to the BLM's recommendation of 14 ft to minimize resource impacts while still meeting OSHA safety requirements and the needs of the proponent.

Consideration of temporary road construction would not lessen or eliminate the potential resource impacts of the proposed permanent road construction. As Perpetua Forests Company explained in their February 22, 2008 letter to the BLM, this road is needed for "long-term management of our timber lands and not for one time access. Management of our land will not stop after harvesting the existing timber, we will need to access this ground for other management activities over time as well as for accessing the next rotation of harvestable timber as it matures." Management includes activities such as site preparation, planting, brush control, fertilization, and thinning. In order for Perpetua to commercially thin and/or harvest their managed stands in the future they would need to periodically reconstruct the 3,609 ft of native surface road, which would result in more impacts to the environment than would the original proposal for permanent road construction with limited access (i.e., the proposed road would be closed to public use through the installation of a gate).

A narrower road alternative does not offer an alternative that is significantly different than the Proposed Action, which has already reduced the original road width proposal of 17 ft to 14 ft, and still meets engineering standards for the site specific location conditions.

No other viable alternative means of timber removal has been identified when explored with Perpetua Forests Company. Other private access has been denied. Helicopter logging would not be logistically or economically feasible since there is no existing BLM road access or suitable helicopter landings occur within 0.75 miles of the private harvesting area. An entirely ridge top location road route would be logistically feasible to meet engineering standards and OSHA safety requirements with the topographic conditions present.

3. Of those alternatives identified in Question #2, are there reasonable alternatives for wholly or partially satisfying the need for the proposed action? If so, briefly describe alternatives and go to question #4. If no, document rational and stop evaluation.

As stated in the response to Question #2, a temporary road would not meet the purpose and need for Perpetua Forests Company's long-term management objectives on their land. A narrower road width of 14 ft or narrower clearing width of 40-60 ft would not meet the purpose and need for Perpetua's objectives as the road must meet engineering standards and Occupational Safety and Health Administration (OSHA) requirements. The proposed ROW clearing width of 40-60 ft is already the minimum needed for the intended purpose for Perpetua to haul equipment (lowboy, dozer, yarder) and remove timber from their lands while complying with OSHA regulations for safety.

A BLM engineer scoped all feasible road access points to meet BLM's engineering standards such as turn radius for heavy equipment and road grade. The constructed road must also provide access that meets the need of the applicant. A road that remains strictly or partially on a ridge top did not meet that criteria.

No other reasonable alternative exists to partially or wholly provide access to private land and extract timber.

- 4. Of those alternatives identified in Question #3, will such alternatives have meaningful differences in environmental effects?** If so, seek line officer approval to carry alternatives forward for detailed analysis in the environmental assessment. If no, document rationale and stop evaluation.

No alternatives were identified in response to Question #3. As such, the revised EA will contain a detailed analysis of the No Action Alternative and the Proposed Action Alternative.

APPENDIX 3 - ENVIRONMENTAL ELEMENTS

Environmental Assessment Number OR-118-08-006

In accordance with law, regulation, executive order and policy, the interdisciplinary team reviewed the elements of the human environment to determine if they would be affected by the alternatives described in Chapter 2 of the revised EA (environmental assessment). The following three tables summarize the results of that review. Those elements that are determined to be “affected” will define the scope of environmental concern, Chapter 3 of the revised EA.

Table 1. Critical Elements of the Environment. This table lists the critical elements of the human environment (BLM Handbook 1790-1) which are subject to requirements specified in statute, regulation, or executive order and the interdisciplinary teams predicted environmental impact per element if the alternatives described in Chapter 2 of the revised Environmental Assessment were implemented.		
Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Air Quality (Clean Air Act)	Not Affected	Dust created from constructing, using, and maintaining approximately 3,609 ft of road on BLM land is expected to be localized. Particulate matter would not be of a magnitude to harm human health, affect the environment, or result in property damage. As such, the Proposed Action is consistent with the provisions of the Federal Clean Air Act.
Areas of Critical Environmental Concern (ACEC)	Not Affected	There are no ACECs within the Project Area.

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Cultural, Historic, Paleontological	Not Present	<p>On BLM land, cultural resource surveys were completed April 2006 within the proposed ground disturbing activity location and no sites were found. Guidelines for the survey followed compliance procedures for cultural resource survey set forth by Section 106 National Historic Preservation Act (NHPA). Surveys would be conducted using Oregon State Historic Preservation Office (SHPO) protocol. If cultural resources are found during project implementation; the project may be redesigned to protect the cultural resource values present, or evaluation and mitigation procedures would be implemented based on recommendations from the resource area archaeologist with concurrence from the State Historic Preservation Office. All such sites would be evaluated and protected by the BLM under the following Federal laws: Federal Land Policy and Management Act of 1976, National Historic Preservation Act (Section 106) of 1966, Antiquities Act of 1906, Archaeological Resource Protection Act of 1979, Reservoir Salvage Act of 1960, American Indian Religious Freedom Act of 1978, National Environmental Policy Act of 1960, and Native American Graves Protection and Repatriation Act of 1990.</p> <p>Public comments on the EA identified a concern regarding potential visual impacts to the historic site of Golden National Historic State Park located in T33S-R5W-Section 19. The effects of the proposed ROW across BLM land and harvesting on private land are within the scope of the Medford District Resource Management Plan's Environmental Impact Statement which expected all private forest land would be harvested on a 60 year rotation; therefore, there would be no additional effects from the proposed action on this state park.</p> <p>Public comments on the EA also identified a concern regarding a mining adit and related mining cultural resources. The mining adit is not located within the ground disturbing activities of the Proposed Action; therefore, the project would not affect the mining adit or related mining "cultural artifacts" identified by the public comments.</p>
Energy (Executive Order 13212)	Not Present	There are no known energy resources located in the Project Area. The Proposed Action would have no effect on energy development, production, supply and/or distribution.
Environmental Justice (Executive Order 12898)	Not Affected	The Proposed Action is not anticipated to have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.
Prime or Unique Farm Lands	Not Present	There are no Prime or Unique farmlands in or adjacent to the Project Area.
Flood Plains (Executive Order 11988)	Not Affected	The proposed road is located near a ridgeline, and does not involve occupancy and modification of floodplains, and would not increase the risk of flood loss. As such, the Proposed Action is consistent with Executive Order 11988.

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Hazardous or Solid Wastes	Not Present	The proposed action does not involve any hazardous or solid wastes.
Invasive, Nonnative Species (Executive Order 13112)	Affected	<p>The existing roadside and proposed ROW location on BLM land was surveyed for noxious weeds in the spring of 2006. One population of <i>Senecio jacobaea</i> (Tansy ragwort) was located.</p> <p>Openings from road construction and increased vehicle traffic can provide suitable habitat for noxious weeds to colonize or provide vectors that may introduce noxious weed seeds into the disturbed area. In an effort to address the potential for project activities to increase the rate of spread of noxious weeds, Project Design Features (PDFs) have been included in the project to decrease the potential spread of weeds associated with the action alternatives. These PDFs are widely accepted and utilize Best Management Practices (BMPs) in noxious weed control strategies across the nation (Thompson, 2006).</p> <p>There are three main reasons why potential weed establishment that might be caused by the Proposed Action is not expected to result in a detectable effect to overall ecosystem health. First, surveys indicate that a very small area (less than 0.25 acres) within the Planning Area is affected by noxious weeds. Second, the species residing at the proposed ROW location is not considered a priority species for manual treatment, as biological controls have proven effective at containing and eventually reducing the existing populations. Third, as aforementioned, Project Design Features (PDFs) have been established to minimize the rate at which project activities might potentially spread noxious weed seed from outside/adjacent sources. The unit of measure is a narrative. <i>Refer to Section 3.2 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i></p>
Native American Religious Concerns	Not Present	No pre-European settlement cultural sites were found within the Project Area. If such sites are found during the implementation of the Proposed Action, the project may be redesigned to protect the site values present, or evaluation and mitigation procedures would be implemented based on recommendations from the Resource Area Archaeologist.

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T/E (Threatened or Endangered) Fish Species or Habitat	Not Affected (SONC coho salmon including coho critical habitat)	<p>The new road construction on BLM land and use and maintenance associated with the new road would have no effect on Southern Oregon Northern (SONC) California coho salmon (ESA-Threatened) or coho critical habitat (CCH). Coho presence and CCH in Coyote Creek is approximately 1.9 mile from the proposed road construction and use, and road maintenance. The proposed road is located on a stable site, with no stream crossings. Sediment would not be transported to CCH because of the scope, the ridgeline location, the lack of stream crossings, the location of the road outside of riparian reserves, the proximity of the road to fish habitat and the design features to reduce the transmission of fine sediment. No effects from the new road construction or use are anticipated to occur to CCH.</p> <p>The Board Tree Quarry, which would be used to dispose of the end haul material, is located within a riparian reserve approximately 1.4 mile from CCH in Wolf Creek. Due to topographic features, material disposed in the quarry would not enter the adjacent perennial stream. Disposal of end hauled material at end of the 33-5-7 road, 33-5-18.0 road, or where the proposed road intersects an existing skid trail on the saddle are not expected to result in sediment entering stream channels and therefore CCH because of the flat topographical features and there are no mechanisms for waste material to enter stream channels. Therefore no effects from the use of any of the disposal sites to CCH are anticipated. Moving end haul material to these locations would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road. Hauling on these roads would not result in sediment entering CCH because 1) these roads are either paved or graveled and 2) the minimal number of loads to be hauled (approximately 6 trucks).</p> <p>No other T/E fish species occur within this watershed.</p>
T/E (Threatened or Endangered) Plant Species or Habitat	Not Present	<p>Of the four federally listed plants on the Medford District (<i>Fritillaria gentneri</i>, <i>Limnanthes floccosa</i> ssp. <i>grandiflora</i>, <i>Arabis macdonaldiana</i>, and <i>Lomatium cookii</i>), only <i>Fritillaria gentneri</i> has a range and habitat which extends into the Glendale Resource Area. Although this ROW Project Area is within the range and habitat of <i>F. gentneri</i>, as determined by the 2006 US Fish and Wildlife Service Biological Opinion, vascular plant surveys were conducted in the spring of 2006, and no <i>Fritillaria gentneri</i> populations were found. There would be no anticipated effect from the Proposed Action on any federally listed plant.</p>

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T/E (Threatened or Endangered) Wildlife Species, Habitat and/or Designated Critical Habitat	Affected (NSO & Fisher habitat including NSO Critical Habitat) Not Present (MAMU, including Critical Habitat)	<p><u>Affected:</u> The Proposed Action would remove 1 acre of federal suitable habitat and 2.5 acres of dispersal habitat in CHU OR-32 for the NSO (northern spotted owl) – threatened and 3.5 acres for the Pacific fisher (candidate). The unit of measure is acres of habitat removed or maintained. <i>Refer to Section 3.4 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i></p> <p><u>Not Present:</u> The Project Area is outside the natural range of marbled murrelets. The Proposed Action would not occur within designated marbled murrelet Critical Habitat.</p>

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Critical Element of the Human Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure to describe environmental impacts, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Water Quality (Surface and Ground)	Not Affected (Temperature, Large Woody Debris, Chemical/Nutrient Contamination)	<p>The federal action does not involve the manipulation or removal of any riparian vegetation on BLM land and thus would not affect stream temperatures or the recruitment and development of large woody debris. No burning would occur in conjunction with road construction or timber hauling activities on BLM land. As such, this action would not be expected to result in any chemical or nutrient contamination.</p> <p>On BLM land, application of glyphosate herbicide would be restricted to treatment along the proposed Perpetua ROW. This herbicide is categorized as “slightly toxic to mammals, birds, fish, bees, and aquatic invertebrates”. It is the least toxic and most stable of the herbicide types and breaks down the quickest in the environment. It readily bonds to soil particles, and once bound becomes inactive. Microorganisms found within all soils quickly degrade glyphosate herbicides giving it a half life of 21-60 days. Glyphosate is so strongly absorbed into the soil that crops can be seeded or transplanted immediately into treated areas. Because these products quickly bind to soil particles, transport of these herbicides into subsurface water that might be used by living organisms or for irrigation would not be expected. Additionally, due to the proximity of the roadside spraying to any surface water locations the ground based application of herbicides proposed under this action would not enter any surface water sources, including Robinson Gulch, located over 1,800 feet below the proposed road, or its tributaries, the closest of which is over 200 feet away or the spring located on private land (350 ft away).</p>
	Affected Sedimentation	<p>The proposed road construction begins off of the 33-5-18 road on the north side of the ridge approximately 200 ft from the ridge top. The portion of the road on this side of the ridge is approximately 300 feet in length. The closest water source to this road location is an intermittent headwater stream that is located below the 33-5-18 road and the proposed road. The proposed road then extends onto and over the ridge to the south side of the hillslope for the remaining 3,309 ft. On the south side of the road, the road is never more than approximately 500 ft from the ridge, and at its closest point, is more than 200 ft above the two nearest water sources, one perennial and one intermittent stream. There are no stream crossings or headwalls within the clearing limits of the proposed road construction. Slopes on the south side of the ridge, where a majority of the construction activities would occur, are generally less than 35%. On the north side of the ridge where the first 300 feet of this road would be located, slopes exceed this, at about 65%. To mitigate for this slopes steepness, the first 300 feet would be full bench construction which would prevent excessive erosion, or any potential slumping issues. Slopes throughout this Project Area have sufficient course</p>

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Water Quality (Surface and Ground) (continued)		ground cover, in the form of ground vegetation and/or downed woody debris and fine overstory litter, to keep erosion primarily on site. As such, there are no apparent mechanisms for additional sediment to be transported to streams as a result of the construction or use of the proposed road. Sedimentation from roads used during the end hauling of excavated material from the first 300 feet of the proposed road and from the proposed disposal sites, is discussed in Chapter 3, under hydrology and soils, but would not result in a visible increase in stream turbidity, or a measurable increase in stream sediment deposition for more than 25 ft within any stream channels, where they are present below stream crossings. The overall effects of the proposed action on water quality would be within State of Oregon water quality standards and would not result in any measurable effects on macroinvertebrates or aquatic habitat. <i>The unit of measure is a narrative. Refer to Section 3.3 of the EA for a discussion of affected environment and environmental effects of the alternatives related to this element of the environment.</i>
Wetlands (Executive Order 11990)	Not Affected	The Proposed Action would not result in the destruction, loss or degradation of any wetland on federal land. As such, the Proposed Action is consistent with Executive Order 11990.
Wild and Scenic Rivers	Not Present	
Wilderness	Not Present	

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary teams predicted environmental impact per element if the alternative described in Chapter 2 of the Environmental Assessment were implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Essential Fish Habitat [Magnuson-Stevens Fisheries Conservation and Management Act (MSA)]	Not Affected (Essential Fish Habitat for coho and chinook salmon)	<p>The new road construction and use and maintenance of the new road would have no effect on Essential Fish Habitat (EFH). EFH in Coyote Creek is approximately 1.9 mile from the proposed road construction and hauling. The proposed road is located on a stable site, with no stream crossings. Sediment would not be transported to CCH because of the scope, the near ridgeline location, the lack of stream crossings, the location of the road outside of riparian reserves, the proximity of the road to fish habitat and the design features to reduce the transmission of fine sediment. No effects from the new road construction and use and maintenance of the new road are anticipated to occur to EFH.</p> <p>The Board Tree Quarry, which would be used to dispose of the end haul material, is located within a riparian reserve approximately 1.4 mile from EFH in Wolf Creek. Due to topographic features, material disposed in the quarry would not enter the adjacent intermittent or perennial streams. Disposal of end hauled material at the end of the 33-5-7 road, 33-5-18.0 road, or where the proposed road intersects an existing skid trail on the saddle are not expected to result in sediment entering stream channels and therefore EFH because of the flat topographical features and there are no mechanisms for waste material to enter stream channels. Therefore no effects from the use of any of the disposal sites to EFH are anticipated. Moving end haul material to these locations would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road. Hauling on these roads would not result in sediment entering EFH because 1) these roads are either paved or gravel and 2) the minimal number of loads to be hauled (approximately 6 trucks).</p>
Fire Risk	Not Affected	<p>Although new road construction has the potential to increase risk of fire ignition due to an increase in human presence, construction of the ROW road would have a negligible affect on fire risk. This is because the length of road is minimal; would not be a major travel route as a spur road; it would not provide access to an appealing recreation or other high-use site; nor is it near any major population centers which provide the potential for human presence; and would be gated to further limit human presence. Hauling has not been known to considerably affect fire risk. As such, there would be no expected measurable adverse affects on fire risk.</p>
Fire Hazard	Not Affected	<p>The proposed ROW road construction and use and maintenance of the new road are not expected to have any direct effects on fire hazard in the area because the action would not result in any measurable changes to the current fuel model as the area involved is minimal and most of the slash would be crushed and covered in the fill slope of the road.</p>
Land Uses (right-of-ways, permits, etc)	Not Affected	<p>The Proposed Action would not have adverse or beneficial effects to any existing land use.</p>
Mineral Resources	Not Affected	<p>A search of the BLM's LR2000 database indicates there are no active mining claims in T33S-R5W-Section 17.</p>

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Late-Successional Forest	Proposed Action is in compliance with the 15% Standard and Guideline	Federal ownership of late-successional forest is approximately 58% (USDI 1999) of the entire Grave Creek fifth-field watershed. The Northwest Forest Plan standards and guidelines state that at least 15% of fifth field watersheds should be managed to retain late-successional patches (ROD, C-44). As such, the Proposed Action is in compliance with the 15% Standard and Guideline.
Port-Orford-Cedar	Not Present	Project Area is outside the natural range of Port-Orford-cedar.
Recreation	Not Affected	<p>There are no developed recreation sites that would be affected by the Proposed Action. The area is open to dispersed recreation use, as it most of the Glendale Resource Area. The Proposed Action would have a neutral effect on dispersed recreation within the resource area. There may be increased logging truck traffic during the operational months, this type of activity is typical for the area because of harvesting on private and other government owned lands. Gating of the newly constructed road would limit public access.</p> <p>The total 0.68 miles (3,609 feet) increase in a dead-end BLM spur road is not expected to change the current condition of off-road vehicle use in the area since this is a minimal increase to road mileage and does not connect with the rest of the road system within this watershed. Such conditions would not encourage additional use by the general public.</p> <p>The public comments on the Perpetua Forests Company Right-of-Way Road Construction Project (EA#OR118-06-006) noted concern to changes in the visual landscape impacting the recreational experience at Golden National Historic State Park. The Medford District RMP anticipated all private forested lands would be harvested on a 60 year rotation and this area has historically been a working landscape for timber management. Therefore, the proposed ROW or private harvesting would not affect the recreational experience of Golden State Park nor would the effects be outside those disclosed in the Medford District EIS.</p>
Rural Interface Areas	Not Present	The Proposed Action is not located in an area designated as Rural Interface (RMP, map 13). Installation of a gate at the start of the new road would reduce public traffic to the area.
Special Areas (not including ACEC)	Not Present	

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Special Status Species (not including T/E): Fish Species/Habitat	Not Present Survey & Manage	There are no Survey and Manage fish species listed in the <i>Final Supplemental Environmental Impact Statement and Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines</i> (FSEIS, 2000 and ROD, 2001) including any amendments or modifications in effect as of March 21, 2004.
	Not Present Southern Oregon Coast/California Coast Fall and Spring Chinook	Southern Oregon Coast/California Coast chinook, a Bureau Strategic species are not located within the Wolf Creek sub-watershed
	Not Affected: Southern Oregon/Northern California Coho (also federally listed as threatened)	The new road construction on BLM land and use and maintenance on the new road would have no effect on the Bureau Sensitive Southern Oregon Northern (SONC) California coho salmon. Coho presence and CCH in Coyote Creek is approximately 1.9 mile from the proposed road construction, hauling and road maintenance. The proposed road is located on a stable site, with no stream crossings. Sediment would not be transported to CCH because of the scope, the near ridgeline location, the lack of stream crossings, the location of the road outside of riparian reserves, the proximity of the road to fish habitat and the design features to reduce the transmission of fine sediment. No effects from the new road construction or hauling are anticipated to occur to coho.
		The Board Tree Quarry, which would be used to dispose of the end haul material, is located within a riparian reserve approximately 0.5 mile from summer and winter steelhead in Board Tree Creek. Due to topographic features, material disposed in the quarry would not enter the adjacent intermittent or perennial streams. Disposal of end hauled material at the end of the 33-5-7 road, the 33-5-18.0 road, or where the proposed road intersects an existing skid trail on the saddle are not expected to result in sediment entering stream channels and therefore steelhead habitat because of the flat topographical features and there are no mechanisms for waste material to enter stream channels. Therefore no effects from the use of any of the disposal sites to steelhead are anticipated. Moving end haul material to these locations would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road.

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Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Special Status Species (not including T/E): Fish Species/Habitat (continued)	Not Affected: Klamath Mountain Province Summer and Winter Steelhead Trout (continued)	<p>Summer and winter steelhead trout, a Bureau Strategic Species (which do not require species management IM OR-2007-072) are present in Coyote Creek. The new road construction and use and maintenance on the new road would have no effect on summer or winter steelhead. Summer and winter steelhead use in Coyote Creek is approximately 1.9 mile from the proposed road construction and hauling. The proposed road is located on a stable site, with no stream crossings. Sediment would not be transported to CCH because of the slope, the near ridgeline location, the lack of stream crossings, the location of the road outside of riparian reserves, the proximity of the road to fish habitat and the design features to reduce the transmission of fine sediment. No effects from the new road construction and hauling are anticipated to occur to steelhead habitat. Streams with steelhead trout are managed by the BLM as fish bearing streams as directed by the RMP. The BLM objective for fisheries management is to maintain or enhance the fisheries potential of streams and other waters (RMP p. 49). As such habitat for lamprey and cutthroat habitat would be maintained within the Planning Area.</p> <p>Hauling on these roads would not result in sediment entering steelhead habitat because 1) these roads are either paved or gravel and 2) the minimal number of loads to be hauled (approximately 6 loads).</p>
	No management requirement: Pacific lamprey and coastal cutthroat trout	<p>Pacific lamprey and Oregon coast cutthroat trout are also found within the planning areas. Lamprey and cutthroat are not on the Special Status Species list. Streams with lamprey and cutthroat trout are managed by the BLM as fish bearing streams as directed by the RMP. The BLM objective for fisheries management is to maintain or enhance the fisheries potential of streams and other waters (RMP p. 49). As such habitat for lamprey and cutthroat habitat would be maintained within the Planning Area.</p>

Table 2. Other Elements of the Environment. This table lists other elements of the environment which are subject to requirements specified in law, regulation, policy, or management direction and the interdisciplinary teams predicted environmental impact per element if the alternative described in Chapter 2 of the Environmental Assessment were implemented.

Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Special Status Species (not including T/E): Plant Species/Habitat	Not Present: Bureau Special Status Vascular and Nonvascular Plants	On BLM land, vascular plant surveys were conducted in the spring of 2006, and surveys were completed in the spring of 2006 for lichens and bryophytes. A professional botanist surveyed the proposed ROW using intuitive controlled methodology, wherein areas supporting high potential habitat were surveyed more intensively. All surveys were completed in accordance with the 2001 S&M protocol, and revealed no Survey and Manage or Bureau Special Status plant sites and no new S&M or bureau special status nonvascular plant sites.
	Not Present: Lichens (Nonvascular)	Bryoria pseudocapillaris, Bryoria spiralifera, Hypogymnia duplicate, Leptogium cyanescens, Lobaria linita, Nephroma occultum, Niebla cephalota, Pseudocyphellaria perpetua, Pseudocyphellaria rainierensis, Teloschistes flavicans
	Not Present: Bryophytes (Nonvascular)	Schistostega pennata, Tetraphis geniculata
	Not Present: Vascular Plants	<i>Botrychium minganense</i> , <i>Botrychium montanum</i> , <i>Coptis asplenifolia</i> , <i>Coptis trifolia</i> , <i>Corydalis aquae-gelidae</i> , <i>Cypripedium fasciculatum</i> , <i>Cypripedium montanum</i> , <i>Eucephalis vialis</i> , <i>Galium kamtschaticum</i> , <i>Plantanthera orbiculata</i> var. <i>orbiculata</i>
	Not Affected: Bureau Special Status Fungi	The project area was not surveyed for fungi, as pre-disturbance surveys for Special Status fungi are not practical, nor required per BLM – Information Bulletin No. OR 2004-121, which states “If project surveys for a species were not practical under the Survey and Manage standards and guidelines (most Category B and D species), or a species’ status is undetermined (Category E and F species), then surveys will not be practical or expected to occur under the Special Status/Sensitive Species policies either (USDA FS and USDI BLM, 2004, p.3).” Current special status fungi were formerly in the aforementioned S&M categories which did not consider surveys practical, and are therefore exempt from survey requirements. With the recent instatement the new Bureau Special Status Species policy, 18 species of fungi were designated as Sensitive, 9 of which have been documented on Medford District. As mentioned above, none of these species require surveys.

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Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Special Status Species (not including T/E): Plant Species/Habitat (continued)	Not Affected: Bureau Special Status Fungi (continued)	<p>District wide, the Medford BLM has 18 Bureau Sensitive (BSO) fungi species; 9 are suspected to occur here, while the remaining 9 have been documented. Based on the outcome of utilizing the ‘Likelihood of Occurrence Key’ provided from the BLM Oregon State Office, there is a “low likelihood of occurrence and low risk to species viability or trend toward listing,” for sensitive fungi species potentially located in the Project Area. While it is possible that this project is occurring within potential habitat for some species, there is very little information available describing the <i>exact</i> habitat requirements or population biology of these species (USDA/USDI 2004, p. 148).</p> <p>Based on the above information, the likelihood of a Bureau Sensitive fungi species in this Project Area is very low; the likelihood of a sensitive fungi occurring within the Project Area is even lower. The likelihood of contributing toward the need to list is not probable.</p>
Special Status Species (not including T/E): Wildlife Species/Habitat	Affected	<p><u>Red Tree Vole</u> – (2001 ROD S&M species) Suitable habitat for red tree voles, present in the Project Area. The very limited scope of a 40-60 ft wide, 2/3 mile new road construction is expected to remove a small amount of red tree vole habitat, 1 acre containing scattered trees >20 inches, and remaining 2.5 acres with average dbh less than 16 inches. The area of disturbance exceeds the useable road width (14 ft), and includes curve widening, and vegetative removal beyond turnouts, for full bench, and cut and fill road construction. The distance of vegetative removal above and below road prism also depends on the hillside slope. The road is designed for safety, maintenance, and was marked by a BLM engineer and wildlife biologist to minimize resource impacts. A Non-high Priority Site (NPS) analysis evaluated 2 active RTV sites affected by the ROW to determine if they meet the criteria for NPS rating. The designation of the two sites as NPS, to be released for other resource uses would not measurably change the distribution pattern of the remaining active RTV sites, because the sites do not occur in an area where active nest density is low or surveys have detected low densities of active nests, or where removal of known sites would redefine the edge of the species’ range, and do not occur in an area where persistence has been identified as a concern. The USFWS has concurred that the 2 active nests meet the criteria for as Non-high Priority Sites. The unit of measure is a narrative. <i>Refer to Section 3.5.1 of the EA for a discussion of the affected environment and environmental effects of the alternatives related to this element of the environment.</i></p>

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Special Status Species (not including T/E): Wildlife Species/Habitat (continued)	Not Affected	<u>Fringed Myotis-</u> (<u>Bureau Sensitive</u>) No known sites in the project area. Large tall snags in early decay stages providing roosting structure not present in the project area. The removal of trees for ROW is not expected to affect snag day roosts, or contribute towards the need for federal listing.
	Not Present	<u>Bureau Sensitive:</u> – white-tailed kite, American peregrine falcon, flammulated owl, Lewis’ woodpecker, white-headed woodpecker, streaked horned lark, red-necked grebe, Siskiyou short-horned grasshopper, Johnson’s hairstreak, mardon skipper, coronis fritillary, Siskiyou hesperian snail, traveling sideband snail,. Oregon shoulderband snail, Chace sideband snail, Crater Lake tightcoil, evening fieldslug, Siskiyou mountain salamander, foothill yellow-legged frog, Oregon spotted frog, Townsend’s big-eared bat, pallid bat.
Migratory Birds	Not Affected	Birds of Conservation Concern (BOCC): olive-sided flycatcher, rufous hummingbird, black-throated gray warbler, yellow warbler, and Game Birds Below Desired Condition (GBBDC): mourning dove, band-tailed pigeon (IM No. 2008-050 Migratory Bird Treaty Act Interim Management Guidance) may occur in the Glendale Resource Area and near the Project Area. They are not expected to be affected because the habitat within the ROW is mostly young forest with little to no ground or midstory structure diversity, and removal of approximately 5 widely distributed large diameter trees (>30 inches dbh) would have no measurable effect on species composition or population levels. Adequate untreated areas in and adjacent to the Project Area would maintain habitat. Overall, populations in the region would be unaffected due to the loss of 5 large diameter trees and 1 acre of late successioanl habitat for the 28,360 acre Wolf Creek sub-watershed. This small amount of loss that would not be measurable at the regional scale. Partners in Flight supports the eco-regional scale as appropriate for analyzing bird populations. No change in population levels or species of concern.

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Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Soil (productivity and erodibility)	Affected (Productivity)	<p>Productivity</p> <p>BLM Lands: The proposed permanent road construction would result in soil disturbance on approximately 3.5 acres, and soil compaction on about 1.2 acres. This would permanently reduce the number of acres available for timber production on Matrix lands by approximately 1.2 acres. There would additionally be up to a 0.5 acre loss in soil productivity from disturbance and compaction on the 33-16-18 disposal site. This loss would not be permanent, but could persist for several decades. All other disposal sites are presently disturbed and would not be further impacted by this action. There would be no loss in productivity as a result of the use of the constructed road or hauling excavated material from the proposed road construction site to any of the designated end hauled material disposal sites. The unit of measure is a narrative description of disturbance and compaction, and a calculated, research derived percentage for the associated productivity loss. <i>Refer to Section 3.3 of the EA for a discussion of the affected environment and environmental effects of the Proposed Action related to this element of the environment.</i></p>
	Affected (Erosion)	<p>Erosion</p> <p>The proposed 3,609 ft of road construction on BLM land is located near a ridge. As stated in the water quality section of this appendix, the proposed road construction would begin off of the 33-5-18 road on the north side of the ridge approximately 200 feet from the ridgetop. The portion of the road on this side of the ridge is approximately 300 feet in length. The proposed road would then extend onto and over the ridge to the south side of the hillslope for the remaining 3300 feet. On the south side of the ridge, the road is never more than approximately 500 feet from the ridge. Slopes on the south side of the ridge, where a majority of the construction activities would occur, are generally less than 35%., On the north side of the ridge where the first 300 feet of this road would be located, slopes exceed this, at about 65%. To mitigate for slope steepness, this first 300 feet would be full bench construction which would prevent excessive erosion, or any potential slumping issues. Slopes throughout this Project Area have sufficient coarse ground cover, in the form of ground vegetation and/or downed woody debris and fine overstory litter, to keep</p>

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Soil (erosion and mass wasting)	Affected (Erosion) (continued)	erosion primarily on site. There are no stream crossings or headwalls within the clearing limits of the proposed road construction, and the road would not be hydrologically connected to any stream channels. The proposed road would also be constructed using outsloping, eliminating ditchlines and cross drains that would otherwise increase erosion by concentrating and routing intercepted water. Hauling of excess material from the first 300 feet of full bench construction would result in small amounts of erosion on road surface, and locally in the area immediately downslope of the 33-5-18 and 33-5-7 roads. Small quantities of onsite erosion in the immediate surrounding areas around disposal sites would also occur. This is discussed further in chapter 3, under hydrology and soils. Erosion would not result in a visible increase in stream turbidity, or a measurable increase in stream sediment deposition for more than 25 feet, and would only occur within stream channels located below road crossings. The unit of measure for sediment and turbidity is a narrative. <i>Refer to Section 3.3 of the EA for a discussion of the affected environment and environmental effects of the Proposed Action related to this element of the environment.</i>
	Not Affected (Mass Wasting)	Mass Wasting As discussed above, the proposed road would be located on, or within 500 feet of the ridge. The proposed road location has been examined by engineering, hydrology, and soils staff who have concluded that construction of a road on the proposed portion of both the north and south slopes, would not measurably increase the risk of mass wasting at this site. This conclusion is based on the proposed roads near a ridge-top and upper slope position which would not allow for ample subsurface flow concentrations to form, and the employment of site specific project design features that would require full bench, outsloped construction, on the first 300 feet where steep slopes are present. Outsloped construction would also be used on the remaining portion of the road, which would allow water intercepted by the road surface to readily flow off the road surface and be reabsorbed into the downslope vegetation and ground litter. Because this would keep large amounts of concentrated water from being routed down the slope, this construction feature would further reduce the risk of mass wasting. Disposal sites are all located on stable, nearly flat sites, and material would be disposed of at least 25 feet away from road fill slopes or slope breaks ensuring that any eroded material would not result in an over-steeping of any adjacent slopes. As such, this action would have a neutral effect on the risk of mass wasting potential. Public concerns raised over the deposition of material at the 33-5-7 road location are addressed and visually depicted in Appendix 6 of this document.

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Other Elements of the Environment	Status 1/ Not Present 2/ Not Affected 3/ Affected	Interdisciplinary Team Remarks 1/ If not affected, why? 2/ If affected, develop cause/effect statement, unit of measure, and if applicable, design features not already identified in Appendix D of the RMP to reduce or avoid environmental harm
Visual Resources	Not Affected	<p>The Project Area is located within VRM (Visual Resource Management) Class IV category land. This VRM category allows for moderate changes to the characteristics of the landscape and management activities may dominate the view and be the major focus of the viewer attention.</p> <p>The Proposed Action is consistent with these visual resource management objectives as stated in the Medford District Resource Management Plan (p. 70).</p> <p>The Medford District Resource Management Plan (RMP) Environmental Impact Statement (EIS) (1994) assumed all private forest land would be harvested on a 60 year rotation; therefore the visual effects from Perpetua Forests Company harvesting their land are within the scope of the RMP assumptions.</p>

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Water Resources (not including water quality)	Not Affected	<p>Road acres in this HUC 6 sub-watershed would occupy approximately 2% of the sub-watershed, which is below the 3-4% that research describes as the low end when hydrologic effects such as runoff timing alterations and peak flow increases become measurable (Bowling and Lettenmaier, 1997). The proposed road construction on BLM land would add 0.68 miles (3,609 feet) of road and would remain below the level (3-4%) where changes in runoff timing may occur within a watershed. The near ridgetop location of the proposed spur would not intercept subsurface flow, and any precipitation intercepted or routed by the short spur would be expected to infiltrate back into the soil prior to reaching any streams. Therefore it would not be expected that the activities on BLM land would measurably contribute to an increase in flows or runoff timing.</p> <p>The proposed 3,609 ft spur road on BLM land would increase the amount of impermeable surface in the watershed by 1.2 acres and would not result in a measurable increase in base flows or water yield over the existing condition. Watersheds are generally considered to be at risk for measurable increases in peak flows and water yields, as a result of activities such as road construction or timber harvest, when open space exceeds 25% within the Transient Snow Zone (TSZ) (generally above 2,500 ft in elevation for this area). Rain-on-snow events within the TSZ can accelerate snow melt in forest openings, further increasing the rate of delivery and enhancement of peak flows within a watershed. The road construction on BLM land would increase open space within the Wolf Creek sub-watershed by 1.2 acres which would maintain the percentage of open space conditions within the TSZ of this sub-watershed at 19%. Since sub-watershed and TSZ open space conditions would remain below 25%, canopy removal for the road construction would not result in an increase in the magnitude of current peak flow events, or an increase in annual water yields within the Wolf Creek HUC 6 drainage.</p> <p>The Proposed Action on federal ground is not anticipated to have measurable effects on watershed hydrology and would not affect municipal and domestic water use including the spring located 350 feet from the proposed road on private property (Cabbage Lane).</p>

*Bureau Special Status Species Policy for sensitive species requires that the BLM protect, manage, and conserve those species and their habitats such that any Bureau action would not contribute to the need to list any of these species. Bureau Strategic species, which are not eligible for federal listing status like Bureau sensitive species require documentation of occurrences. These species do not require management or mitigation (IM OR-2007-072).

APPENDIX 4 – AQUATIC CONSERVATION STRATEGY CONSISTENCY ANALYSIS

Environmental Assessment Number OR-118-08-006

“The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy would protect salmon and steelhead habitat on Federal lands managed by the Forest Service and Bureau of Land Management within the range of the Pacific Ocean anadromy,” (Medford District RMP p. 22).

There are four components of the ACS which are riparian reserves, key watersheds, watershed analysis, and watershed restoration. The ACS was designed to meet the nine objectives discussed below.

This ACS consistency analysis evaluates the action alternative (Alternative 2) on BLM land in the Revised Perpetua Forests Company Right-of-Way Road Construction Project EA.

Analysis of the Four Components of the ACS:

1. **Riparian Reserves:** The proposed new road construction, continued use, and maintenance on 3,609 ft of road on BLM land would be located outside riparian reserves and would not have an effect on stream temperature or large woody debris recruitment, nor would it result in any measurable change in sediment to streams or to fish habitat.

The Board Tree Quarry, which would be used to dispose of end hauled material created from the road construction, is located within a riparian reserve. Due to topographic features, material disposed in the quarry would not enter the adjacent intermittent or perennial streams. Disposal of the end hauled material at the end of the 33-5-7 road, the 33-5-18.0 road, or where the proposed road would intersect the existing skid trail on the saddle, are not located within riparian reserves.

Moving end haul material to the disposal sites would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road. Hauling on these roads would not result in sediment entering fish habitat because 1) these roads are either paved or gravel and 2) the minimal number of loads to be hauled (approximately 6 loads).

The action alternatives are also consistent with the Best Management Practices (BMPs) within Appendix D of the Medford RMP.

2. **Key Watershed:** The proposed actions within the action alternative are not located in a Key Watershed.

3. Watershed Analysis: The Glendale Resource Area completed the Grave Creek Watershed Analysis in 1999. The action alternative is consistent with the watershed analysis and would maintain the existing condition of the watershed.

The Grave Creek Watershed Analysis discussed restricting road construction or considering alternatives to constructing new roads in sensitive soil areas (USDI 1999). The proposed new road construction is not located in a sensitive soil area as identified in the Watershed Analysis.

The Grave Creek Watershed Analysis recommended reducing road densities which are not needed for future management (p. 174). During the environmental analysis process for landscape and timber sale planning projects, evaluations are conducted of the existing transportation system to identify opportunities for road decommissioning. Approximately 80% of the public lands in the Medford District are covered by existing reciprocal right-of-way (ROW) agreements. These existing ROW agreements are recognized as valid land uses under the Northwest Forest Plan and the Medford District Resource Management Plan. Upon entering a reciprocal ROW the Permittee obtains an irrevocable right. Pursuant to BLM Handbook H-2812-1 in order for BLM to decommission a road, an evaluation must be conducted as to the existence and extent of ROW encumbrances and a release of interests must be obtained from the Permittee prior to initiating on-the-ground work. In addition, the Permittee may require payment from the BLM for the partial release and sale of the road to be decommissioned. Removal or restoration of roads has already been examined within landscape management projects, such as Middle Cow LSR Landscape Planning Project EA #OR118-05-022, Westside Project EA #OR-118-05-021 and Slim Jim Project EA #OR-118-04-014. The Proposed Action was developed in response to a public request for ROW access and there is no requirement to evaluate roads for decommissioning.

The proposed permanent new road construction is located outside of riparian reserves, would not contribute sediment to fish habitat, and is consistent with management direction in the RMP and the Watershed Analysis. Excerpts from the Grave Creek Watershed Analysis relating to new road construction and maintain riparian and fish habitat are listed below.

- “Current management direction for Riparian Reserves, road building, and road maintenance on Federal land, serve to enhance the protection of the riparian zones as well as unstable areas that could result in sedimentation of fish streams” (USDI 1999, p.15-16).
- “Current RMP directives are thought to produce properly functioning riparian zones on federal lands in the long term and contribute to better water quality and less sedimentation” (USDI 1999, p.16).

- “The most effective, long-term approach for restoring habitat complexity and productivity is through riparian restoration, protection and ensuring that all activities within and outside the riparian area are conducted in accordance with Aquatic Conservation Strategy objectives; this applies to public as well as on non-federal lands” (USDI 1999, p.110).

The Watershed Analysis found that management directions in the Northwest Forest Plan and the RMP including the Aquatic Conservation Strategy, Best Management Practices, and riparian reserve management would be adequate at protecting, maintaining and improving fish habitat.

4. Watershed Restoration: The Revised Perpetua Forests Company Right-of-Way Road Construction Project EA is not a watershed restoration project. The action alternative would not reverse any restoration efforts which have been accomplished or are planned in the Grave Creek Watershed. Roads within the Grave Creek Watershed are decommissioned when possible through separate landscape planning projects. The new permanent road construction is proposed near a ridge top/upper slope location and not within a riparian reserve. The control and prevention of road related runoff and sediment production would be addressed through dry season outslopped construction, installation of water bars during periods of non-use, seasonal use or adequate surfacing and drainage conditions, and gate installation to limit public access.

Consistency Analysis with the Record of Decision Northwest Forest Plan (1994) Aquatic Conservation Strategy nine objectives:

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

The watershed and landscape-scale features which protect species, populations and communities dependent on aquatic systems would be maintained. This conclusion was based on the following information found in the EA:

- “The proposed 3,609 ft spur road on BLM land would increase the amount of impermeable surface in the watershed by 1.2 acres and would not result in a measurable increase in base flows or water yield over the existing condition” (EA p. 90).
- “The road construction on BLM land would increase open space within the Wolf Creek sub-watershed by 1.2 acres which would maintain the percentage of open space conditions within the TSZ of this sub-watershed at 19%. Since sub-watershed and TSZ open space conditions would remain below 25%, canopy removal for the road construction would not result in an increase in the magnitude of current peak flow events, or an increase in annual water yields within the Wolf Creek HUC 6 drainage” (EA p. 90).
- “The proposed road construction on BLM land would add 0.68 miles (3,609 feet) of road and would remain below the level (3-4%) where changes in runoff timing

may occur within a watershed. The near ridgetop location of the proposed spur would not intercept subsurface flow and any precipitation intercepted or routed by the short spur would be expected to infiltrate back into the soil prior to reaching any streams. Therefore it would not be expected that the activities on BLM land would measurably contribute to an increase in flows or runoff timing” (EA p. 90).

- “The proposed 3,609 ft spur road construction on BLM land is located near a ridge. There are no stream crossings or headwalls within this Project Area. Because the proposed road spur would not be hydrologically connected to any stream channels. The proposed road would also be constructed using outslowing, eliminating ditchlines and cross drains that would otherwise increase erosion by concentrating and routing intercepted water.” (EA p. 88).
- “Use of any of the four possible disposal sites for excess material from end hauling would not result in measurable sedimentation. A perennial stream is adjacent to the Board Tree Quarry; however, end hauled material would be located on a relatively flat ground and would be placed as far from the stream channel as possible, at a distance of at least 100 feet. As a result of the nearly flat topographical features associated with this quarry, there would be no mechanisms for the waste material to enter the stream channel. Additionally, PDFs would stabilize material, reduce winter rainsplash or water erosion, and keep any erosion onsite. Disposal of end hauled material at the end of the 33-5-7 road or where the proposed road intersects an existing skid trail on the saddle are not expected to result in sediment entering stream channels because of the flat topographical features and there are no mechanisms for waste material to enter stream channels,” (EA p. 33).
- “Moving end haul material to these locations would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road. Hauling on these roads would not result in sediment entering fish habitat because 1) these roads are either paved or gravel and 2) the minimal number of loads to be hauled (approximately 6 trucks)” (EA p. 76).
- “Disposal sites are all located on stable, nearly flat sites, and material would be disposed of at least 25 feet away from road fill slopes or slope breaks ensuring that any eroded material would not result in an over-steeping of any adjacent slopes. As such, this action would have a neutral effect on mass wasting potential” (EA p. 88).

2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

The spatial and temporal connectivity within and between watersheds would not be affected by the new road construction on BLM land or using any of the designated disposal sites for end hauled material. Chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent

species would be maintained because the new road construction is proposed near a ridge top and would not include any stream crossings nor would it be within a riparian reserve.

3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The physical integrity of aquatic systems, including shorelines, banks, and bottom configurations would not be affected because the new road construction on BLM land is proposed near a ridge top and not within a riparian reserve. The use of designated end hauled material disposal sites, and roads to haul the materials would not cause a change in the shorelines, banks, or bottom configurations because the activities would be done within existing road prisms and existing quarries.

4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Water quality would not be affected. This conclusion was based on the following information found in the revised EA:

“The federal action does not involve the manipulation or removal of any riparian vegetation on BLM land and thus would not affect stream temperatures or the recruitment and development of large woody debris. No burning would be used in conjunction with road construction or timber hauling activities on BLM land. As such, this action would not be expected to result in any chemical or nutrient contamination. On BLM land, application of glyphosate herbicide would be restricted to treatment along the proposed Perpetua ROW. This herbicide is categorized as “slightly toxic to mammals, birds, fish, bees, and aquatic invertebrates”. It is the least toxic and most stable of the herbicide types and breaks down the quickest in the environment. It readily bonds to soil particles, and once bound becomes inactive. Microorganisms found within all soils quickly degrade glyphosate herbicides giving it a half life of 21-60 days. Glyphosate is so strongly absorbed into the soil that crops can be seeded or transplanted immediately into treated areas. Because these products quickly bind to soil particles, transport of these herbicides into subsurface water that might be used by living organisms or for irrigation would not be expected. Additionally, due to the proximity of the roadside spraying to any surface water locations the ground based application of herbicides proposed under this action would not enter any surface water sources, including Robinson Gulch, located over 1,800 feet below the proposed road, or its tributaries, the closest of which is over 200 feet away or the spring located on private land (350 ft away).” (EA, p.78).

5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

The sediment regime under which aquatic ecosystems evolved would be maintained. This conclusion was based on the following information found in the EA:

- “The proposed 3,609 ft spur road construction on BLM land is located near a ridge. There are no stream crossings or headwalls within this Project Area. Because the proposed road spur would not be hydrologically connected to any stream channels. The proposed road would also be constructed using outsloping, eliminating ditchlines and cross drains that would otherwise increase erosion by concentrating and routing intercepted water.” (EA p. 88).
- “Use of any of the four possible disposal sites for excess material from end hauling would not result in measurable sedimentation. A perennial stream is adjacent to the Board Tree Quarry, however, end hauled material would be located on a relatively flat ground and would be placed as far from the stream channel as possible, at a distance of at least 100 feet. As a result of the topographical features associated with this quarry and PDFs, there would be no mechanisms for the waste material to enter the stream channel. Additionally, PDFs would stabilize material, reduce winter rainsplash or water erosion, and keep any erosion onsite. Disposal of end hauled material at (1) the end of the 33-5-7 road; (2) off the 33-5-18.0 road; or (3) where the proposed road intersects an existing skid trail on the saddle are not expect to result in sediment entering stream channels because of the flat topographical features, proximity of these locations to streams, Project Design Features that reduce winter erosion, and a lack of any other routing mechanisms for waste material to enter stream channels.” (EA p. 33).
- “Moving end haul material to these locations would require hauling on portions of roads 33-5-18, 33-5-7, 33-5-10, 33-5-10.3 and Speaker Road. Hauling on these roads would not result in sediment entering fish habitat because 1) these roads are either paved or gravel and 2) the minimal number of loads to be hauled (approximately 6 trucks)” (EA p. 76).

6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

The in-stream flows, including the timing, magnitude, duration, and spatial distribution of peak, high, and low flows would be maintained. This conclusion was based on the following information in the revised EA:

- “The proposed 3,609 ft spur road on BLM land would increase the amount of impermeable surface in the watershed by 1.2 acres and would not result in a measurable increase in base flows or water yield over the existing condition” (EA p. 90).

- “The road construction on BLM land would increase open space within the Wolf Creek sub-watershed by 1.2 acres which would maintain the percentage of open space conditions within the TSZ of this sub-watershed at 19%. Since sub-watershed and TSZ open space conditions would remain below 25%, canopy removal for the road construction would not result in an increase in the magnitude of current peak flow events, or an increase in annual water yields within the Wolf Creek HUC 6 drainage” (EA p. 90).
- “The proposed road construction on BLM land would add 0.68 miles (3,609 feet) of road and would remain below the level (3-4%) where changes in runoff timing may occur within a watershed. The near ridgetop location of the proposed spur would not intercept subsurface flow and any precipitation intercepted or routed by the short spur would be expected to infiltrate back into the soil prior to reaching any streams. Therefore it would not be expected that the activities on BLM land would measurably contribute to an increase in flows or runoff timing” (EA p. 90).

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

The timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands would not be affected because the new road construction on BLM land is proposed near a ridge top and not within a riparian reserve, meadow, or wetland. The use of disposal sites for end hauled material, and roads to haul the material would not cause a change in the characteristics of meadows or wetlands because the activities would be done within existing road prisms and an existing quarry. Use of the designated disposal sites would not involve any vegetation removal within a riparian reserve. “The Proposed Action would not result in the destruction, loss or degradation of any wetland on federal land” (EA p. 79).

8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

The species composition and structural diversity of plant communities in riparian areas and wetlands would not be affected because the new road construction on BLM land is proposed near a ridge top and not within a riparian area or wetland. Construction of the new road would not involve the manipulation or removal of any riparian vegetation.

The use of designated end hauled material disposal areas and roads to haul the material would not cause a change in species composition and structural diversity of plant communities in riparian areas and wetlands because the activities would be done within existing road prisms and an existing quarry within a riparian reserve. Use of the designated end hauled material disposal areas would not involve any vegetation removal.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.

Habitat for riparian-dependent plant, invertebrate and vertebrate species would not be affected because the new road construction is proposed near a ridge top and not within a riparian reserve. The use of designated end hauled material disposal sites and roads to haul the material would not cause a change in riparian-dependent plant, invertebrate and vertebrate species habitat because the activities would be done within existing road prisms and existing quarries. Use of designated end hauled material disposal sites would not involve any vegetation removal within a riparian reserve.

CONCLUSION:

No cumulative adverse effects from the proposed actions are anticipated because the proposed new road would be located outside of riparian reserves on a near ridge top location and not hydrologically connected to streams. The action alternative would not appreciably increase road density on BLM land within the Wolf Creek HUC 6 drainage (an increase of 0.68 road miles or less than 0.02%) and would not be expected to result in measurable stream sedimentation (EA p. 35). “Currently there are no other planned future projects on federal ground that would result in an increase in road acres within the Wolf Creek HUC 6 drainage” (EA p. 35). The proposed road, when considering all other projects that have occurred, or will likely occur, within this HUC 6 sub-watershed, would not measurably affect soil productivity on federal lands (EA p. 37). The combined effects associated with past, present, and future road construction and use would not be expected to result in enough erosion to cause Oregon Department of Environmental Quality water quality standards for turbidity to be exceeded (EA p. 37).

The proposed action alternative on BLM land in the Perpetua Forests Company Right-of-Way Road Construction Project EA would not retard or prevent the attainment of the nine objectives or the four components of the ACS. The new road construction is proposed near a ridge top location and not within a riparian reserve. The use of the designated end hauled material disposal sites and roads to haul the material would be done within existing road prisms and an existing quarry. The action alternative would not result in measurable adverse effects to water quality. There would be no measurable change to stream shade, water nutrient levels, flow regime, or chemical contamination of streams, or springs as a result of this action. This determination was based on the small spatial and temporal disturbances associated with the new road construction, and road use on existing roads. Therefore, the proposed actions are consistent with the ACS of the Northwest Forest Plan Record of Decision (1994).

APPENDIX 5 - FIRE SPECIALIST REPORT

1.0 Fire Hazard

1.1 Background Information

Fire hazard is the ability of a fire to spread once ignition has occurred (NIFC-B 2006). It is contingent upon the fire behavior that a stand has the potential to produce. Fire behavior is determined by three factors: weather conditions like temperature, wind speed, and relative humidity; topographical characteristics such as slope, aspect, and elevation; and the type and arrangement of fuels available such as surface, ladder, or aerial.

Fire is a chemical reaction that results in the release of energy in the form of heat and light when oxygen combines with a combustible material (fuel) at a suitably high temperature (heat). This combination of fuel, heat, and oxygen is often referred to as “the fire triangle” and if any one of the three components is not present, fire cannot burn (NIFC-A 2006).

Fuels, in regard to land management, are defined as combustible vegetative material. Fuels are categorized in several ways, depending on their arrangement:

Surface Fuels: Loose litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, stumps, downed branches, and downed logs (NIFC-B 2006).

Ladder Fuels: Material that provides vertical continuity between surface fuels and aerial fuels. Ladder fuels may include tall grasses and low lying limbs of trees, along with bushes, shrubs, and small trees that make up the understory of a forested stand (NIFC-B 2006).

Aerial Fuels: Vegetation in the forest canopy, including tree branches, twigs and cones, snags, moss, and high brush (NIFC-B 2006).

Fire behavior, in the context of wildland fire, is dictated by fuel, weather, and topography. There are several types of fire behavior, categorized by the fuels that sustain the flame:

Surface fires burn on the surface of the ground and consume surface fuels. The fire stays on the ground.

Passive crown fires, also referred to as “torching,” occur when the fire burns up through the ladder fuels and into the crown of an individual tree or small groups of trees. The fire is sustained by the surface fuels but a solid flame is not consistently maintained in the canopy of the stand of trees.

Active crown fires burn from the surface fuels, up through the ladder fuels, and into the aerial fuels enabling a solid flame to be consistently maintained in the canopy of the stand of trees.

Fire suppression strategies are the methods that firefighting personnel use in order to contain wildland fires. The strategy employed depends on the fire behavior. There are essentially two basic fire suppression strategies, direct attack and indirect attack.

Direct Attack can be used when a fire is exhibiting surface or passive crown fire behavior because the fire intensity is low enough to allow for safe operations by firefighters at the fire's edge (NWCG 1994).

Indirect Attack is used when fire intensity is extreme enough to make working at the fire's edge impractical. This method is usually required when dealing with active crown fires (NWCG 1994).

There are many advantages of using the direct attack method compared to indirect attack. The most important of which is that direct attack is safer for fire suppression personnel than indirect attack because firefighters can escape into the already burned area if necessary. Also, direct attack minimizes the amount of area burned because massive backfiring operations are not required, meaning fires can be contained at smaller sizes (NWCG 2004).

Fire Behavior Threshold-Fire behavior dictates which fire suppression strategy may be effectively employed, and therefore the extent to which a fire may grow and the subsequent damage it may cause. Because fire behavior is critical in fire suppression strategy selection, it serves as the threshold used for analysis. The unit of measure of the threshold is considered in terms of flame length. Flame lengths under 4 feet can generally be effectively managed by fire suppression personnel, such as hand crews, using the direct attack method. Flame lengths greater than 4 feet generally require specialized equipment and indirect attack methods which are inherently more expensive and dangerous due to their complexity (Rothermel 1982).

Table A-3-1. Fire Behavior and Suppression Activities

Flame Length (in feet)	Fire Suppression Strategy	Fire Suppression Tactics
0-4	Direct Attack	Hand crews
4-8	Direct Attack	Dozers, engines, aircraft
8-11	Indirect Attack	Backfiring operations
11+	Indirect Attack	Backfiring operations

Fire behavior fuel models are a tool used to predict fire behavior, including flame length, which is the unit of measure for the fire behavior threshold. The models classify vegetation into four groups: grass, shrub, timber, and slash. Several fuel characteristic factors are incorporated into the models in order to predict the type of fire behavior a stand has the potential to produce under certain environmental conditions.

Table A-3-2. Fire Behavior Fuel Models with Flame Lengths

Fire Behavior Fuel Model	Fuel Model Group	Flame Length (in feet)
1	Grass	4
2	Grass	6
3	Grass	12
4	Shrub	19
5	Shrub	4
6	Shrub	6
7	Shrub	5
8	Timber	1
9	Timber	2
10	Timber	4
11	Slash	3
12	Slash	8
13	Slash	10

1.2 Affected Environment

Reference Conditions

The Grave Creek watershed is located within the Klamath Province Region of southwestern Oregon where fire is recognized as a key natural disturbance process (Atzet and Wheeler, 1982). Prior to Euro-American settlement, low and mixed severity fires burned regularly in most dry forest ecosystems, such as those conditions found in this area. These types of fires controlled the regeneration of fire intolerant species (plants unable to physiologically withstand heat produced by fires), promoted fire tolerant species (for example ponderosa pine and Douglas-fir), and maintained an open forest structure by reducing forest biomass (Graham, 2004). Native Americans influenced vegetation patterns for over a thousand years in this area by igniting fires to enhance values that were important to their cultures (Agee, 1993). Large, low and mixed severity fires were a common occurrence in the area, evidenced by fire scars and vegetative patterns.

Ecosystems with substantial presence of fire contain species that are adapted to it in order to survive (Agee, 1993). The plant communities found in the Grave Creek watershed include the Douglas-fir/tanoak-madrone group, the Mixed conifer/madrone-deciduous brush/salal group, and the White oak-ponderosa pine/manzanita-wedgeleaf/grass groups (USDI 1994). These plant communities are related to natural fire regimes I, II, and III.

Fire regimes refer to a general classification of the role fire would play across a landscape naturally, meaning in the absence of modern human intervention such as aggressive fire suppression efforts. The fire regimes are classified based on fire return interval and fire severity.

Table A-3-3. Natural Fire Regimes

Fire Regime	Fire Return Interval (in years)	Fire Severity	Percent of Planning Area
I	<35	Low	60
II	<35	High	25
III	<50	Mixed	15
IV	35-100+	High	0
V	200+	High	0

Fire Regime I. 0-35 years, High Frequency/Low Severity

Plant communities include pine-oak woodlands and dry Douglas-fir sites found on south and west aspects. Surface fires are the norm with large, high severity fires rarely occurring (i.e. every 200 years). Approximately 60% of BLM land in the Grave Creek watershed is within this fire regime.

Fire Regime II. 0-35 years, High Frequency/High Severity

Plant communities include ceanothus and Oregon chaparral. Typical fire return intervals are 10-25 years. High fire severity occurs due to the presence of brushy vegetation. Approximately 25% of BLM land in the Grave Creek watershed is within this fire regime.

Fire Regime III. < 50 years, Moderate Frequency/Mixed Severity

Plant communities include mixed conifer and Douglas-fir sites found on north and east aspects. Fire severity is mixed with large, high severity fires occurring rarely (i.e. every 200 years). This fire regime exhibits fire behavior that results in mosaic patterns on the landscape with burned and unburned patches. Approximately 15% of BLM land in the Grave Creek watershed is within this fire regime.

Current Conditions

The natural fire regimes in the Grave Creek watershed indicate that the landscape experienced fires frequently, less than every 35 years in 75% of the area and less than every 50 years in 100% of the area (FMP 2006). Aggressive fire suppression efforts since the 1940s have interrupted this natural fire regime, shifting the area into condition classes 2 and 3.

Condition class is a relative description of the degree of departure from natural fire

regimes and generally describes how ecosystems have reacted with fire intervals outside their historic range of variability (FMP 2006).

Condition Class 1 = Fire frequencies are within or near the historical range, and have departed from natural frequencies by no more than one return interval.

Condition Class 2 = Fire frequencies and vegetation attributes have been moderately altered from the historical range, and fire frequencies have departed from natural frequencies by more than one return interval.

Condition Class 3 = Fire frequencies and vegetation attributes have been considerably altered from the historical range, and fire frequencies have departed from natural frequencies by multiple return intervals.

Frequent fires that historically served as thinning mechanisms by naturally regulating stand densities were effectively being excluded from ecosystems by the 1940s (Graham 2004). As a result of the exclusion of fire, natural levels of vegetation are shifting to overstocked stands, with an increase in the number of suppressed trees and shrub species. This dense vegetation serves as surface and ladder fuels that cause undesired changes to potential fire behavior. For example, some stands that naturally resembled Timber Group fuel models 8, 9, and 10 have shifted into Shrub Group fuel models 4 and 6, which have the potential to produce flame lengths above the 4 foot fire behavior threshold (Table A-3-2).

Intensive management practices may have similar effects on fire hazard by producing dense, even-aged stands. The analyses in the RMP are based on the assumption that all private land would undergo intense management on a sixty year rotation (USDI 1994, p. 4-73). The current condition of the 80 acres of private land is a mosaic pattern of vegetation ranging from early to mid seral stage characteristics and can generally be described as Shrub fuel models 4 and 6 as well as Timber fuel models 9 and 10 with the majority of the area capable of producing flame lengths at or above the four foot fire behavior threshold.

1.3 Environmental Effects

Alternative 1

The proposed road construction across BLM would not occur under this alternative. Perpetua Forests Company would not have access to harvest the 80 acre parcel of land in T33S-R5W-Sec20 at this time, unless future access is acquired across non-BLM. Without access, no activity slash would be created, nor would the stand be expected to transition from its current characteristics resulting from forest management activities or from wildfire as fire suppression is expected in the event of a wildfire. Over time it is expected that the growth of vegetation would increase the amount of surface and ladder fuels present. Since the majority of the area is already capable of producing flame lengths

at or above the fire behavior threshold in its current condition, there would be no meaningful adverse affect on fire behavior under Alternative 1.

Alternative 2

Indirect Effects

Short term refers to the six month to two year period from the time slash is produced from harvest activities to the time it is mitigated by being disposed of through removal and/or prescribed fire, or up to three years for the fine fuels to decompose naturally in the absence of treatment.

In the short term, the slash created during the harvest activities could cause the 80 acre area to transition from the current fuel models to a Slash fuel model 11 or 12 with flame lengths of 4 to 8 feet. This transition does not necessarily translate into an affect on fire hazard however, as the flame lengths associated with the current fuel models also exceed the fire behavior threshold. Also, the minimal amount of slash created during the construction of the road is not expected to be abundant enough to change the current fuel model in that area and most of the slash created would be crushed and covered in the fill slope of the road. Therefore, there is no expected direct adverse affect on fire hazard under Alternative 2 either from the harvest activities on the 80 acres of private land or the road construction activities including approximately 3.5 acres of land.

Long term refers to the approximately 20 year period between the time the area has been replanted to the time the plantation undergoes pre-commercial thinning.

The 80 acre parcel is currently a mosaic of vegetation resembling several fuel models. The areas described as Timber fuel model 9 are the minority and are interspersed with areas of fuel models that exceed the 4 foot flame length threshold. In the long term, the early seral conditions resulting from the harvest activity could cause the portions of the 80 acre area that currently resemble Timber fuel model 9, with flame lengths below 4 feet, to transition to Shrub fuel models 4 and 6 with flame lengths above 4 feet, particularly before brushing and pre-commercial thinning treatments are implemented. As stated previously, however, the areas within the 80 acre parcel that resemble fuel model 9 are the minority. As such, this transition does not necessarily translate into a meaningful adverse affect on fire hazard, as the flame lengths associated with the current fuel models in the majority of the area and the future fuel model both exceed the 4 foot fire behavior threshold. Therefore, there is no expected measurable indirect adverse affect on fire hazard under Alternative 2.

2.0 Fire Risk

2.1 Affected Environment

Fire risk is the probability of a fire starting, as determined by the presence of ignition sources (NIFC-B 2006). Ignition sources include natural causes such as lightning, and human causes such as improperly discarded cigarettes and unattended camp fires. Fire risk generally increases as human presence increases because these types of activities become more frequent. Recreational areas and areas along travel routes like trails and roads are usually at a higher risk of a fire ignition than areas that experience less frequent human activity. However, the miles of new road construction and increased human presence do not correlate on a one-to-one basis because many factors aside from access contribute to increased human presence. The most important factor is how appealing the areas are into which the new roads provide access. The new road proposed in Alternative 2 is proposed in order to access timber harvest units, meaning it is a relatively short spur road that dead ends.

2.2 Environmental Effects

Alternative 1

No new road construction would take place on BLM land at this time, therefore no related increase in human presence would occur. As such, there are no expected adverse affects on fire risk under Alternative 1.

Alternative 2

Proposed new permanent road construction theoretically affects fire risk by allowing for increased human presence. This particular road, however, would have negligible affects on fire risk because: the length of road is minimal; the road would not be a major travel route because it would dead end; the road would not provide access to an appealing recreation or other high-use site; the general location of the road is not near any major population centers which provide the potential for human presence; and the road is proposed to be gated to further limit human presence. As such, there would be no expected measurable adverse affects on fire risk associated with Alternative 2.

APPENDIX 6 - PUBLIC COMMENT TO PERPERTUA RIGHT-OF-WAY ROAD CONSTRUCTION PROJECT ENVIRONMENTAL ASSESSMENT (EA#OR118-06-006) AND BLM RESPONSE

The Perpetua Forests Company Right-of-Way Road Construction Project was published in the quarterly BLM Medford Messenger beginning in the fall 2005 issue. To provide for public scoping a brief description of proposed projects, legal description and general vicinity map were provided along with a comment sheet for public responses. Although inquiries were made about the project, no site specific comments were provided.

The Perpetua Forests Company Right-of-Way Construction Project environmental assessment (EA # OR118-06-006) was made available for public comment from February 1 to February 29, 2008. The BLM received 5 comment letters. BLM responses to public comments are found below. These comments will be addressed in the Revised EA (EA#OR118-08-006).

If a number of comments are identical or very similar, agencies may group the comments and prepare a single answer for each group. Depending on the volume of comments received, responses may be made individually to each substantive comment or similar comments may be combined and a single response made. The Code of Federal Regulations (40 CFR §1503.4) identifies five possible types of responses for use with environmental impact statements.

1. Modify alternatives including the Proposed Action.
2. Develop and evaluate alternatives not previously given serious consideration by the agency.
3. Supplement, improve or modify the analysis.
4. Make factual corrections.
5. Explain why the comments do not warrant further agency response, citing the sources, authorities or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

**George Sexton, Conservation Director, Klamath Siskiyou Wildlands Center;
Boyd Peters, Legacy Lands; Francis Eatherington, Umpqua Watersheds, Inc.; and
Zarod Rominiski & Gail Roudebush, Board Members, Cabbage Lane Land Trust**

1) Comment: There is only one action alternative for this project, and no alternative methods (such as aerial logging, temporary road, narrower road, or landscape restoration) were developed and considered as an action alternative by the agency in the EA.

Response: In Chapter 1, Section 1.6.2 “Alternative Access Consideration”, explains “An evaluation of alternate means of access to the area of timber extraction other than road construction was explored with Perpetua Forests Company. In consideration of the absence of available roads and suitable helicopter landing and service areas within 0.75 miles creating logistical infeasibility of helicopter extraction, the original submittal for road construction location was found to be the only viable option to extract timber within the area of interest.”

“This environmental assessment analyzes the environmental effects associated with Perpetua Forests Company’s request to construct and log haul on 3,609 feet of road across BLM Matrix land allocation to access and harvest trees on land owned by Perpetua,” (EA, p.9). Under the No Action Alternative, no roads would be constructed across BLM lands. Perpetua Forests Company would not be able to harvest their lands without this access across BLM managed land.

Under the Proposed Action (Alternative 2) one spur road would be constructed across BLM lands to access private lands.

Perpetua Forests Company submitted a road construction right-of-way request on July 28, 2005 to harvest timber on their land located in T33S, R5W, Section 20. As explained in their February 22, 2008 letter to the BLM, this road is needed for “long-term management of our timber lands and not for one time access. Management of our land will not stop after harvesting the existing timber, we will need to access this ground for other management activities over time as well as for accessing the next rotation of harvestable timber as it matures.” Management includes activities such as site preparation, planting, brush control, fertilization, and thinning. The road can also be use for fire prevention and suppression access.

Since there were no unresolved conflicts concerning alternative uses of available resources identified by the interdisciplinary team (40 CFR § 1502.14), there was no procedural requirement to develop additional action alternatives (Appendix 1 p. 46-49).

The BLM has considered a range of reasonable alternatives given the small scope of the Proposed Action (including abandonment of the project, the No Action Alternative) that would avoid or minimize adverse effects of these actions upon the quality of the human environment. You fail to offer a specific alternative that is cost effective and meets the Purpose and Need, and is significantly different than the Proposed or No Action alternative already analyzed in the EA. The only other alternative use of available resources would entail BLM road access, which is discussed in Appendix 2 (p. 63-64) and rigorously explores and objectively evaluates all reasonable alternatives, and alternatives which were eliminated from detailed study, and discusses the reasons for their having been eliminated.

The National Environmental Policy Act directs federal agencies to study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources

(Oregon Natural Desert Association v. Singleton, 47 F.Supp.2d 1182, 1194 (D.Or. 1998). Parties claiming a NEPA violation involving failure to consider a reasonable alternative must offer a specific, detailed counterproposal that has a chance of success. In the Morongo Band of Mission Indians v. Federal Aviation Admin., parties claiming a NEPA violation involving failure to consider a reasonable alternative must offer a specific, detailed counterproposal that has a chance of success. Also in other cases it was determined that an agency does not have to consider alternatives that are not feasible, Headwaters, Inc., 914 F.2d at 1180-1181 and an agency does not have to consider alternatives that would not accomplish the purpose of the proposed project, City of Angoon v. Hodel 803 F.2d 1016, 1021 (9th Cir 1986).

A narrower road alternative does not offer an alternative that is significantly different than the Proposed Action, which has already reduced the original road width proposal of 17 ft to 14 ft, and still meets engineering standards for the site specific location conditions.

A restoration-only alternative with no new roads in spotted owl critical habitat does not meet the Purpose and Need wholly or partially. Restoration opportunities have been assessed in our landscape management projects, such as Middle Cow LSR Landscape Planning Project EA #OR118-05-022, Westside Project EA # EA #OR-118-05-021 and Slim Jim Project EA #OR-118-04-014, all which occur in the same spotted owl critical habitat unit (OR-32) as the Perpetua ROW Project. These EAs not only identified roads to decommission, but also identified forest stands that benefit from fuels treatments and thinning to safeguard and accelerate habitat growth in spotted owl critical habitat.

Reasons, as identified above, for not analyzing in detail more than one action alternative will be addressed in the revised EA.

Francis Eatherington, Umpqua Watersheds, Inc.

2) Comment: *The EA should have considered an alternative to make a ridge-top road.*

Response: A BLM engineer scoped all feasible road access points to meet BLM's engineering standards such as turn radius for heavy equipment and road grade. The constructed road must also provide access that meets the need of the applicant. A road that remains strictly or partially on a ridgetop did not meet that criteria.

Francis Eatherington, Umpqua Watersheds, Inc.

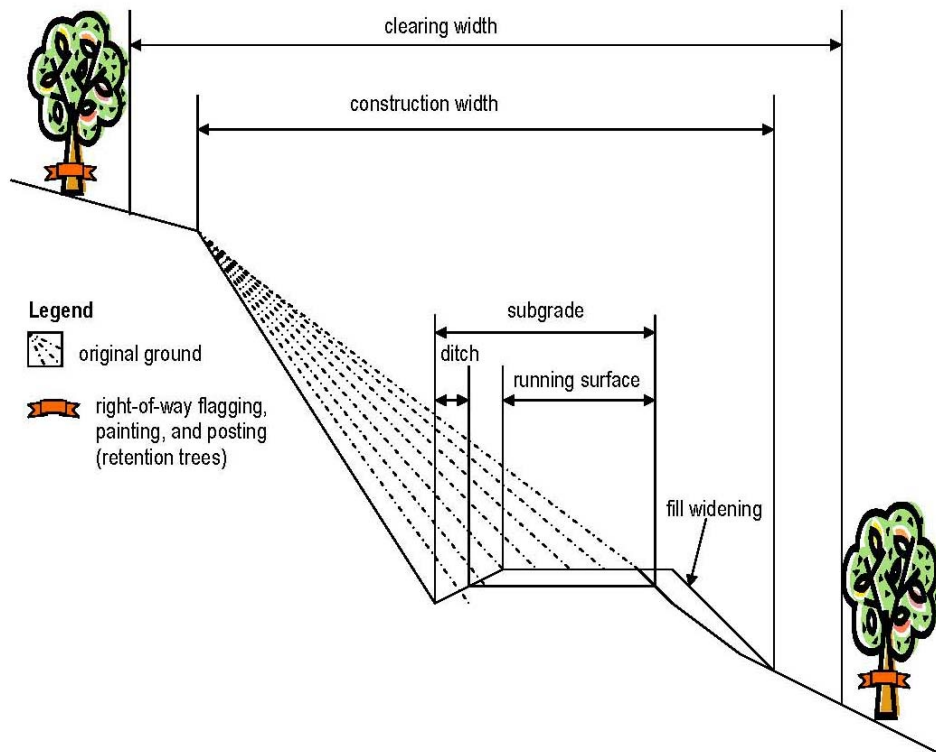
George Sexton, Conservation Director, Klamath Siskiyou Wildlands Center and Zarod Rominiski & Gail Roudebush, Board Members, Cabbage Lane Land Trust

3) Comment: *The EA fails to disclose why it insists on a 'clearing width of approximately 40-60 feet through the CHU in order to construct a 16 foot wide road. BLM should consider a narrower road.*

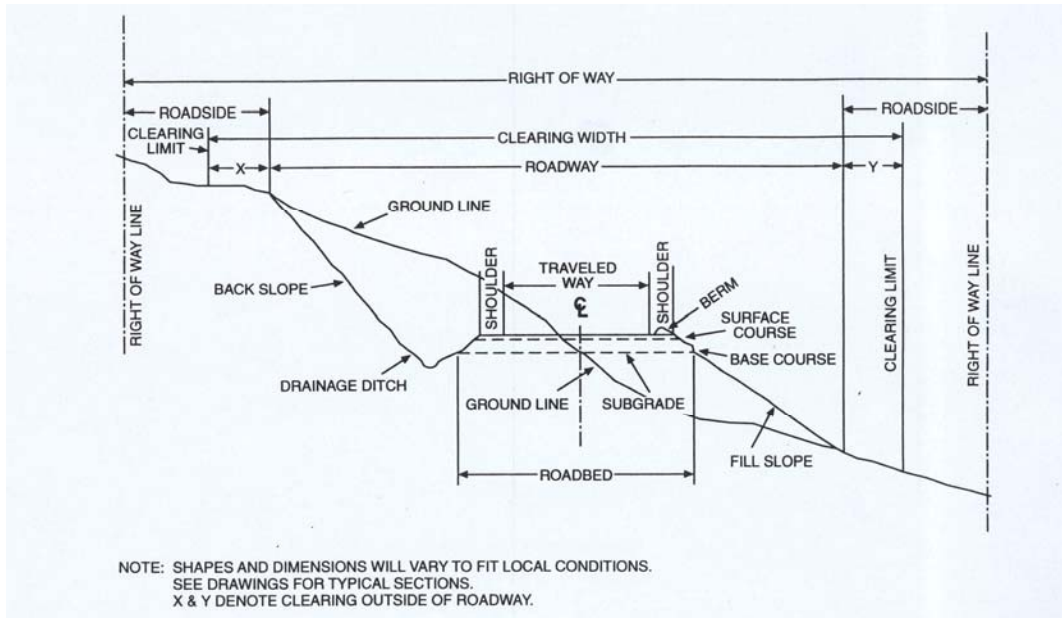
Response: The Perpetua Forests Company letter referenced in response to comment #1, articulates the need for the 40-60 ft road clearing width, “The proposed clearing limits were designed to meet the widths necessary for constructing a road on the slopes that exist on this project. Consideration has to be given to the finished road surface, the cut slope and the fill slope. It is our objective to utilize as narrow of cutting limit as possible to keep the cost of the project to a minimum and still build a safe road capable of handling oversized logging machinery.”

The below diagrams depict engineering standards to accommodate road construction for topographical conditions present in the proposed project area. The proposed ROW design includes “full bench” construction for the first 300 ft and “cut and fill” construction of the remaining 3,309 ft.

Design Components of “Full Bench” Construction



Design Components of “Cut and Fill” Construction



United States Department of Agriculture Forest Service Engineering Staff Washington D.C. EN 7115-501-100 Revised October 1997; Roads - Self-Study Training Course Construction Certification Program; Chapter One, Basic Information, page 1-3

No dimensions are given as roads are built for different purposes, such as accommodating various size equipment or heavy machinery, as is the case for the Perpetua Forests Company Right-of-Way Road Construction Project. There is no set standard for road construction clearing widths since ground conditions, road construction tolerances (running widths), turnout spacing, and drainage structures dictate the width of the clearing needed to meet use objectives. For example, roads constructed on flat ground require clearing the traveled way or road template with minor clearing for sight distance. “Cut and fill” road construction requires wider clearing widths to construct the fill slope, cut slope, turnouts, turnarounds, and curve widening, as well as for safe sight distances. Trees at the top of cut and toe of the fill are also cleared to prevent trees from falling into the roadway. These roads are usually permanent roads with long term management objectives.

The EA (p. 13) states “[t]he road is designed for safety, maintenance, and was marked by a BLM engineer and wildlife biologist to minimize resource impacts. The clearing widths would vary, and resource impacts are analyzed at 40-60 feet; actual clearing widths may fall within that range, or be slightly less.” (EA p. 13). The revised EA will provide a more thorough description of the engineering design and standards needed to construct the requested ROW road in the topographical conditions present at the site.

The clearing width was field verified by a BLM Civil Engineering Technician with over 20 years of experience and is appropriate given the slope and topographical features present. Road widths are not a one-width-fits-all conditions or needs. The following photo demonstrates the necessity for increased running surface and radius curves.



The BLM has already reduced Perpetua’s original road width request for 17 ft to 14 ft while still meeting engineering standards and OSHA requirements. The proposed ROW clearing limit of 40-60 ft is already the minimum needed to allow for the roadway construction for the intended purpose for Perpetua Forests Company to haul equipment (lowboy, dozer, yarder) and remove timber from their lands while complying with OSHA regulations for safety.

It appears the commenters have misinformation or misunderstood the description of a 26 ft clearing width road in the Umpqua National Forest’s description of what the commenters refer to as a 26 ft road clearing width. The Forest Service road is a temporary road with no turnouts unlike the permanent road requested for the Perpetua Forests Company Right-of-Way Road Construction Project. Temporary roads have different engineering standards, as the life of the road is typically limited to one or two seasons of use followed by decommissioning.

George Sexton, Conservation Director, Klamath Siskiyou Wildlands Center and Zarod Rominiski & Gail Roudebush, Board Members, Cabbage Lane Land Trust

4) Comment: “The EA assumes that gated access would reduce traffic disturbance to the area. This assumption is not reasonable.” The EA does not disclose or analyze the impacts of existing, and potential increased, OHV use on hydrology, soils or wildlife.

Barricades, however, don’t mitigate the edge effects and microclimatic changes that roads produce. Various studies (e.g., Ortega and Capen 1999; Marsh and Beckman 2004) show that the negative impacts of roads to wildlife habitat are not limited to the road prism –there is a zone of influence that extends into the adjacent habitat. For example, Marsh and Beckman (2004) found that some terrestrial salamanders decreased in abundance up to 80 meters from the edge of a forest road due to soil dessication from the edge effects. Ortega and Capen (1999) found that ovenbird (a forest-interior species) nesting density was reduced within 150 meters of forest roads.

This study suggests that even narrow forest roads fragment habitat and exert negative effects on the quality of habitat for forest-interior species.

-Deadman's Palm EA III-110. Ashland Resource Area, Medford BLM.

Response: The Proposed Action does not propose to reduce the effects of forest fragmentation on common forest dwelling species through the use of barricades. The effectiveness of barricades on reducing forest fragmentation effects from habitat removal is not assumed in the EA.

“The total 0.68 miles (3,609 feet) increase in a dead-end BLM spur road is not expected to change the current condition of off-road vehicle use in the area since this is a minimal increase to road mileage and does not connect with the rest of the road system within this watershed. Such conditions would not encourage additional use by the general public.” (Appendix 2, p.70). The project area is not in an ATV exclusion area and the use of roads by ATVs is a valid use of roads. The installation of a gate is not intended to exclude all vehicular access, but to reduce access of large vehicles which would therefore reduce soil disturbance and a potential source of erosion on a natural surface road. The gate is not installed for the purpose of reducing disturbance or environmental effects to habitat or wildlife. No wildlife special status species or migratory birds of conservation concern are expected to occur or be effected (EA Appendix 2 p. 75).

“Additionally, it would not be expected that this project would measurably contribute to an increase in flows or runoff timing, as the near ridgetop location of the proposed spur would not intercept subsurface flow and any water intercepted or routed by the spur road would be expected to infiltrate back into the soil prior to reaching any streams.” (EA p. 3)

5) Comment: *“Aquatic habitat in fish streams within this subwatershed is poor as a result of sedimentation, summer water temperatures, lack of down wood in the channel, poor pool quality, high road density and the location and integrity of riparian reserves.” -Perpetua ROW EA at page 27.*

“No actual analysis or disclosure of cumulative impacts is being attempted by the BLM for this road construction project. Rather than actually analyze the cumulative impacts of past projects, adjacent projects and reasonably foreseeable projects, the BLM simply lists the acreage of some planned projects (without analysis) while virtually ignoring the vast amount of degradation that has already occurred in this watershed from logging roads and logging activities. Instead of examining the impacts of your past practices on the functionality of this critical habitat unit and this watershed as required by NEPA and 9th Circuit case law, the BLM relies on illegal CEQ ‘guidance’ directing the agency to ignore the site-specific impacts of your past actions. (EA page 18). The EA is simply silent as to the numerous findings contained in the WA indicating that roads and associated timber harvest have drastically impacted wildlife connectivity, hydrological function and health and soil health and productivity.”

We request that BLM consider the cumulative review of impacts of this road, and adjacent past and future projects on the Cabbage Lane water system, and adopt Project Design Features to mitigate negative impacts.

Response: While the Affected Environment section of the EA identifies the current condition of aquatic habitat for fish in this sub-watershed as poor, “There are no stream crossings or headwalls within the proposed construction area on BLM land,” (EA, p.28). Therefore, “eroded material would be expected to remain primarily onsite within the vegetation during the construction and use of this road. Consequently, no measurable additional sediment would be expected to reach the closest intermittent stream approximately 200 feet downslope, or fish-bearing stream, approximately 1.9 miles downstream, due to the substantial distance from proposed activities on BLM land,” (EA, p.28).

“Alternative 2 (Proposed Action) would result in soil compaction and top soil erosion that would reduce localized areas of soil productivity on BLM land. The effects of disturbance from 3.5 acres of permanent road construction would create 1.2 acres of compaction and productivity losses within the Wolf Creek HUC 6 sub-watershed analysis area. Given the scope and location of the proposed road construction (Alternative 2) and log hauling on BLM land, these actions are anticipated to have a negligible impact to soil productivity in federal lands at the watershed scale. These actions would be consistent with all soil productivity, compaction, and erosion standards set forth in the Medford District RMP. Additionally, it would not be expected that this project would measurably contribute to an increase in flows or runoff timing, as the near ridgetop location of the proposed spur would not intercept subsurface flow and any water intercepted or routed by the spur road would be expected to infiltrate back into the soil prior to reaching any streams.” (EA, p.3).

“Productivity loss as a result of this Proposed Action would be minimal, and would be expected to have only a negligible (less than 0.05% of Matrix land allocation) impact on future timber volumes available for harvest on BLM Matrix land allocation in the future. Therefore this proposed road, when considering all other projects that have occurred, or will likely occur, within this HUC 6 sub-watershed, would not measurably affect soil productivity on federal lands.” (EA, p.32).

In regards to cumulative effects, the Council on Environmental Quality (CEQ), in guidance issued on June 24, 2005, points out, the “environmental analysis required under NEPA is forward-looking,” and review of past actions is required only “to the extent that this review informs agency decision-making regarding the Proposed Action.” Use of information on the effects on past action may be useful in two ways according to the CEQ guidance. One is for consideration of the Proposed Action’s cumulative effects, and secondly as a basis for identifying the Proposed Action’s direct and indirect effects.

The CEQ stated in this guidance that “[g]enerally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” This is because a

description of the current state of the environment inherently includes the effects of past actions. The CEQ guidance specifies that the “CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions.” Our information on the current environmental condition as described in the EA is more comprehensive and more accurate for establishing a useful starting point for a cumulative effects analysis, than attempting to establish such a starting point by adding up the described effects of individual past actions to some environmental baseline condition in the past that, unlike current conditions, can no longer be verified by direct examination.

The second area in which the CEQ guidance states that information on past actions may be useful is in “illuminating or predicting the direct and indirect effects of a proposed action.” The usefulness of such information is limited by the fact that it is anecdotal only, and extrapolation of data from such singular experiences is not generally accepted as a reliable predictor of effects.

The proposed road construction is not expected to have measurable effects to the Cabbage Lane water system, and therefore the project would not incrementally add to effects occurring as a result of other projects. For instance, in Cabbage Lane’s public comment letter, the following statement is made: “*Water flow to the reservoir is good; the reservoir can be full even in August.*” This provides a good baseline of environmental conditions by focusing on the current aggregate effects of past actions that may have occurred adjacent to the Cabbage Lane property, without delving into the historical details of individual past actions.

6) Comment: “[P]roposed activities within the project area would result in the reasonable probability of spreading noxious weeds.”-Perpetua ROW EA, Glendale Resource Area, 2008, page 23.

The BLM is aware that Tansy ragwort is present directly adjacent to the proposed road construction located on an existing road. There is no question that the proposed road construction and roading activities will contribute to the spread of these, and other, noxious weeds. The Glendale Resource Area’s oft-repeated contention that the Medford RMP guidance and standards and guidelines are not meant to be met at the project level is incorrect. “Avoid introducing or spreading noxious weed infestations in any areas. Reduce infestations where possible.” (RMP 92). Noxious weeds in the planning area are already having a detectable effect on the ecosystem and the contention that additional impacts from the proposed action will not result in a detectable effect to the environment is simply not credible. As acknowledged in the EA (page 24) the no action alternative reduces the immediate potential for the spread of noxious weeds in the planning area.

BLM has not included in the cumulative effects that noxious weeds may spread into Cabbage Lane property.

Response: The EA continues to state, “However, the rate at which this potential spread would occur is unknown due to the indistinguishable causal effect of other activities and

factors listed in table 3-2 on the spread of noxious weeds”...including private land, logging on private lands, motor vehicle traffic, recreational use, rural and urban development, and natural processes.

Also, as summarized in the Finding of No Significant Impact (FONSI) section of the EA (p.4) regarding noxious weeds, “There are three main reasons why potential weed establishment that might be caused by the Proposed Action are not expected to result in a detectable effect to overall ecosystem health. First, surveys indicate that very small percentages (less than 0.25 acres) within the Planning Area – are affected by noxious weeds. Second, the species actually residing at the proposed ROW location is not considered a priority species for manual treatment, as biological controls have proven effective at containing and eventually reducing the existing populations. Third, Project Design Features (PDFs) have been established to minimize the rate at which project activities might potentially spread noxious weed seed from outside/adjacent sources. BLM’s influence over the causes of the spread of noxious weeds is limited to those caused by human activities. Additional human disturbance and traffic would increase the potential for spreading noxious weed establishment, but regardless of human activity, spread of these weeds will continue through natural forces. Thus, the BLM cannot stop the spread of noxious weeds but might reduce the risk or rate of spread. Under the No Action Alternative, noxious weeds are likely to spread over time regardless of whether or not the ROW is granted, and that rate would not be altered to any detectable degree at the 6th field watershed level by the Proposed Action.”

To predict the rate of this degradation would be highly speculative, as the extent of weed expansion is dependent on so many factors that it is considered impossible to quantify. More aggressive species are slated for treatment under Medford District’s *Integrated Weed Management Plan and Environmental Assessment OR-110-98-14* under a separate project. However, the success of implementing the weed management plan would be temporary, as logging on non-federal lands, recreational use, rural and urban development, natural processes and vehicle traffic will continue to spread noxious weed populations into the Planning Area.

The Specialist Report discloses that cumulative effects of the proposed action on the spread of noxious weed encroachment is limited because there is no available or existing data regarding noxious weed occurrence on local non-federal lands. Therefore, BLM assumes that 1) there is a perpetual source of noxious/invasive weeds on non-federal lands that can spread to federal lands, especially when the land ownership is checkerboard, as within the Planning Area, and 2) conversely that noxious weeds are not established on these lands, and therefore there is a need to reduce the risk of spread of noxious weeds from the federal lands to the adjoining non-federal lands. Since BLM’s influence over the cause of spreading noxious weeds is limited to human activities, additional human disturbance and traffic would increase the potential for spreading noxious weed establishment. However, regardless of human activity, spread of these weeds will continue through natural forces. Thus, the BLM cannot stop the spread of noxious weeds, it may only reduce the risk or rate of spread.

Cabbage Lane Trust's comments state that disturbed and open areas from past logging and mining are already widely present within the Trust area: "These conditions are widely present on Cabbage Lane land as a result of past logging and mining."

PDFs exist to reduce the potential that the proposed action would contribute to the spread of weed seed and establishment of new populations. PDFs are not intended or expected to completely eliminate any possibility that the proposed action would contribute to the spread of weed seed and establishment of new populations; however, PDFs ensure that any incremental contribution of the proposed action to the spread of weeds, when added to the rate of weed spread caused by past, present, and future actions, would be so small as to be incapable of quantification or distinction from background levels at the 6th field watershed level.

7) Comment: *"Roads on sloping ground intercept surface water and shallow groundwater. The water is commonly routed by the road to a draw or other natural drainage way that is part of the natural stream system. This process causes drainage water to reach streams quicker than would naturally occur. The more roads that exist in a particular area, the more the potential increase to peak stream flow. With an increase of peak stream flow, streambanks are more susceptible to erode as the stream channel adjusts to the change in flow pattern. Additional stream sediment caused by this phenomenon predominately comes from eroded streambanks. Other sources for stream sediment are the road surface and eroded channels created by flows downslope from drainage outlets."*

-Jumpoff Joe Watershed Analysis page 22.

While the quotation above is from an analysis conducted in the nearby Jumpoff Joe watershed on the Grants Pass Resource Area, it succinctly illustrates the type of roads analysis that is wholly lacking from the Glendale Resource Area's Perpetua Road EA. Not only does the EA completely fail to address the interception of surface water and change in flow pattern mentioned above, it also ignores the impacts of the proposed full bank construction with an excavator on mass wasting and subsurface flows. Indeed, the "analysis" contained in the EA regarding mass wasting (EA page 77) and sub-surface flows (EA page 78) describe the road construction as occurring on a "ridge-top and upper slope location" while completely ignoring the first 300 feet of road construction which would be conducted by an excavator and require full bench construction on very steep slopes.

Response: The proposed road would be located on, or within 500 feet of the ridge. The proposed road location has been examined by engineering, hydrology, and soils staff who have concluded that construction of a road on the proposed portion of both the north and south slopes, would not measurably increase the risk of mass wasting at this site. This conclusion is based on the proposed roads ridge-top and upper slope position which would not allow for ample subsurface flow concentrations to form, and the employment of site specific project design features that would require full bench, outsloped construction, on the first 300 feet where steep slopes are present. Outsloped construction would also be used on the remaining portion of the road, which would allow water intercepted by the road surface to readily flow off the road surface and be reabsorbed into the downslope vegetation and ground litter. Because this would keep large amounts of

concentrated water from being routed down the slope, this construction feature would further reduce the risk of mass wasting. A more thorough description of potential hydrologic impacts from the first 300ft of full bench construction will be provided in the revised EA.

George Sexton, Conservation Director, Klamath Siskiyou Wildlands Center

8) Comment: *KS Wild states that while two “interest form” submissions from the Medford Messenger were provided by Oregon Wild on 12/9/05 and 10/2/07, the Glendale Resource Area did not respond to these requests.*

Response: The Glendale Resource Area contacted Oregon Wild regarding both requests via phone call shortly after the requests for information were received. The requester stated they were interested in the status of the EA’s release date and to ensure Oregon Wild was on the EA’s public mailing list. Glendale Resource Area staff replied the EA was not ready for release at the time of each inquiry and verified that Oregon Wild was on the project’s EA mailing list. No further questions or information was requested at that time.

9) Comment: *“...the EA fails to acknowledge that the proposed road construction is located within the 1800-acre Wolf Creek un-inventoried roadless area... It is unfortunate that the BLM is unable or unwilling to recognize or analyze any of the myriad of values and significant issues surrounding the management of interior unroaded forest habitat other than the obstacle such habitat presents to helicopter yarding.”*

Response: Roadless areas are a U.S. Forest Service designation and it is not applicable to the BLM. It is interesting that the commenter previously cites the project area as possessing high road densities yet for this particular comment is claiming it is a roadless area.

10) Comment: *“The Ortega and Capen (1999) and the Marsh and Beckman (2004) articles referenced by the Ashland Resource Area are attached to these comments for your convenience. We explicitly request that the decision maker consider the conclusions found in the peer-reviewed article by Trombulack and Frissell (2000) detailing some of the negative impacts of road construction and use on Terrestrial and Aquatic ecosystems.”*

Response: The watersheds and project area are already affected by high road density; Trombulack and Frissell (2000) focuses on negative impact only, and does not even to attempt to give an analysis on benefits from roads. The article review keys in on the importance to conservation of avoiding construction of new roads in roadless or sparsely roaded areas and of removal or restoration of existing roads to benefit both terrestrial and aquatic biota. The project area is not roadless or sparsely roaded. The Purpose and Need of the project is not road restoration or removal.

Ortega and Capen (1999) addresses effects of fragmentation in extensive forested landscapes in Vermont on the Ovenbird. The results of the study are not directly applicable, as the article did not establish that environmental conditions are similar to the project area. The general concept of fragmentation effecting wildlife has been addressed in the EA.

The Marsh and Beckman (2004) article discusses study results of fragmentation on detectability and surface activity of commons salamander species in Virginia. The results of the study are not directly applicable, as the article did not establish that environmental conditions are similar to the project area. The general concept of fragmentation effecting wildlife has been addressed in the EA.

11) Comment: *As acknowledged on page 4 of the EA, the proposed road construction “would increase open space within the Wolf Creek sub-watershed by 1.2 acres” within the Transient Snow Zone (TSZ). Rather than disclose the reasonably foreseeable cumulative impacts of the proposed road in conjunction with the large-scale roading and regeneration harvest proposed in the Five Rogues and Westside timber sales, the EA limits its “analysis” to a statement of the current percentage (19%) of the 6th field watershed that is currently in an open condition. No mention is made of the foreseeable proposal in the WOPR to greatly accelerate the rate of forest openings in this and other watersheds.*

Response: The proposed Perpetua Forests Company Right-of-Way Road Construction Project “would not result in a measurable increase in base flows or water yield over the existing condition”. Since this project would not cause the watershed to exceed 25% of open space within the Transient Snow Zone (TSZ) and “would maintain the percentage of open space conditions within the TSZ of this sub-watershed at [its current] 19%”, this project does not meaningfully change the amount of open space beyond the contributions of the Five Rogues and Westside timber sales.

The cumulative impact of a project is “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.” 40 C.F.R. § 1508.7. CEQ has consistently, and explicitly, interpreted NEPA to require only such scientific study as will aid the agency in its ability to make an informed decision about the project at issue. It is not better documents but better decisions that count.

The EA (p.19) states “The Western Oregon Plan Revisions, although reasonably foreseeable, are still in process and subject to change based on public comments and subsequent administrative remedies. They, therefore, provide insufficient information for meaningful consideration at this time (see NAEC v. Kempthorne, 457 F.3d 969, 979-80 (9th Cir. 2006) finding it lawful to consider the cumulative effects in the later broad-scale planning analysis). Additionally, the purpose of this current proposal is to implement the existing Medford District Resource Management Plan (RMP). This EA has been prepared to determine if any significant environmental effects of the proposal are substantially greater than what has already been analyzed in the existing RMP’s

programmatic EIS. The EIS associated with the current Western Oregon Plan Revision effort contains a cumulative effects analysis that incorporates these implementation actions (projected to occur under the existing plan as the 'No Action' alternative and possible ongoing actions carried forward into the Action Alternatives), in a manner appropriate to the land use planning scale. The Western Oregon Plan Revision EIS therefore serves as the appropriate vehicle for analyzing the cumulative effects of each land use alternative's management scheme. Any potentially cumulative effects of this proposal at the programmatic level that would be relevant to the proposed plan revision will be considered in that process."

12) Comment: The commenter believes the Glendale Resource Area...

a) illegally applied the *Final Supplemental Environmental Impact Statement and Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (FSEIS 2004 and ROD 2004)* to the Perpetua Right-of-Way Road Construction Project;

b) "...neglected to manage populations of rare LSOG [late successional old growth] dependant species...";

c) "did not undergo NEPA commenting, to avoid buffering known red tree vole sites" by relying "on a 'non-high priority site' determination";

d) "shirk[ed] its duty to survey for rare fungi species" by relying "on a non-NEPA bulletin (OR 2004-121)";

e) "relies on the on the 2000 Survey and Manage FEIS and 'implementation of Riparian Reserves' to provide future RTV habitat..." and "the 2007 [Survey & Manage] ROD will eliminate these protections for the RTV" or the WOPR would "reduce or eliminate the riparian reserve system"

Response to 12a): The Proposed Action conforms to the *Final Supplemental Environmental Impact Statement and Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (FSEIS 2000 and ROD 2001)* including any amendments or modifications in effect as of March 21, 2004 (EA p. 10), not the Survey & Manage *FSEIS 2004 and ROD 2004*.

Response to 12b): The commenter does not specify what late successional old growth dependant species they are referencing.

Response to 12c): The EA contains a detailed analysis of effects to red tree voles from the proposed ROW construction on EA p.42-45.

Response to 12d): The EA tiers to the *Final Supplemental Environmental Impact Statement and Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (FSEIS, 2000 and ROD, 2001)* including any amendments or modifications in effect as of March 21, 2004 and identifies plan conformance with the ROD (p. 12).

As stated in the Perpetua Forests Company Right-of-Way Road Construction EA (Appendix 3 p. 74), “The project area was not surveyed for fungi, as pre-disturbance surveys for Special Status fungi are not practical, nor required per BLM – Information Bulletin No. OR 2004-121, which states “If project surveys for a species were not practical under the Survey and Manage standards and guidelines (most Category B and D species), or a species’ status is undetermined (Category E and F species), then surveys will not be practical or expected to occur under the Special Status/Sensitive Species policies either (USDA FS and USDI BLM, 2004, p.3).” Current special status fungi were formerly in the aforementioned S&M categories which did not consider surveys practical, and are therefore exempt from survey requirements. With the recent instatement the new Bureau Special Status Species policy, 18 species of fungi were designated as Sensitive, nine of which have been documented on Medford District. As mentioned above, none of these species require surveys.”

No fungi were removed from the Survey and Manage program through the Annual Species Review process that required pre disturbance surveys.

Response to 12e): The application of Riparian Reserves will not differ between the *Final Supplement to the 2004 Supplemental Environmental Impact Statement to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines* (FSEIS, 2007 and ROD, 2007) and the *Final Supplemental Environmental Impact Statement and Record of Decision and Standards and Guidelines for Amendment to the Survey & Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (FSEIS 2000 and ROD 2001) including any amendments or modifications in effect as of March 21, 2004.

See response to comment #10 regarding applications of the Western Oregon Plan Revision (WOPR) to this project.

13) Comment: The Aquatic Conservation Strategy (ACS) Consistency Analysis (Appendix 4) does not constitute a “hard look” at the aquatic impacts of the proposed road construction because it: (a) Relies upon the continued existence of the riparian reserve land use allocation which the BLM is currently attempting to reduce or eliminate via the WOPR; (b) ignores the extreme cumulative impacts of road construction and timber harvest that have occurred and are continuing to occur in this watershed; (c) assumes that the road is located on a “ridgetop and upper slope location” in order to discount the likelihood of mass wasting (EA page 77) despite the fact that the first 300 feet of the road will consist of full bench construction via an excavator on steep slopes; and (d) assumes that the road is located on a “ridgetop and upper slope location” in order to discount the likelihood of interception subsurface flows (EA page 78) despite the fact that the first 300 feet of the road will consist of full bench construction via an excavator on steep slopes.

Response to 13a): See response to comment 11 regarding application of the Western Oregon Plan Revision (WOPR) to this project.

Response to 13b): The EA states (p.20) “The effects analysis of Perpetua Forests Company’s private harvest tiers to the RMP which assumed that private lands would be extensively managed with an average rotation of 60 years. The analysis also assumes that Perpetua Forests Company would operate within the regulations of the Oregon Forest Practices Act (OFPA), including standards and guidelines designed to minimize project effects.” This assumption is repeated in the Environmental Consequences (Chapter 3) sections for impact analysis on soils and hydrology (p.31) as well as the northern spotted owl, fisher, and red tree vole (p.38 , 41 & 42, and 45 respectively).

Response to 13c & 13d): See response to comment #7 regarding road location and construction.

14) Comment: *“The proposal to remove and downgrade over 1,019 acres of CHU OR-32 through the Westside, Bonny Skull and Middle Cow projects clearly will result in significant environmental impacts to ecologically critical resources that will be exacerbated by punching a 60-foot wide clearcut through the CHU to facilitate your proposed road construction. The cumulative impacts of these proposed actions on the connectivity and habitat values of CHU OR-32 have not been documented in any NEPA document or Biological Opinion.”*

Response: The proposed Boney Skull project does not occur within CHU OR-32. The cumulative effects on CHU OR-32 from Westside and Middle Cow are analyzed as foreseeable actions that would maintain critical habitat suitability. “Recent and foreseeable actions that maintain habitat through harvesting and fuels/young stand treatment include Fizzy Stew, Healthy Murph and Starving Cow (677 acres NRF and dispersal maintained) [Middle Cow LSR Landscape Planning EA Project # OR118-05-022]. Spotted owl habitat analyzed for suitable habitat removal (198 acres), downgrade to a dispersal (367 acres), and dispersal habitat maintained (292 acres) in CHU OR-32 (Westside Project EA #OR-118-05-021) for foreseeable projects from the EA would maintain suitable and dispersal habitat conditions.” (EA p. 39).

The cumulative effects of removing 1 acre of 35,165 acres of suitable habitat and 2.5 acres of 24,585 acres of dispersal owl habitat from CHU OR#32 (FY 06-08 Biological Assessment p.50) in a narrow strip near ridgetop when added to other past, present, and foreseeable activities would not measurably reduce the ability of the CHU to provide nesting, roosting, foraging, and dispersal habitat because the narrow corridor removal of scattered large trees interspersed with smaller trees would maintain opportunity for nesting, roosting, foraging, and dispersal in the effected stand, based on the fact that the ridgetop/upper slope location: (1) is not likely to be selected for nesting or roosting, as owls typically use the lower two thirds of slopes for this (Blakesley et. al., 1992; Hershey et. al., 1998); (2) the opening created for the ROW would be limited to 40-60 ft wide and owls will disperse across roads and forage along edges, (3) most of the ROW is in younger dispersal age habitat, and (4) and absence of spotted owl nest sites within ¼ mile since Glendale Resource Area began monitoring the owl sites in 1988 indicates known nesting habitat within the stand would not be adversely affected. (EA p. 39)

The BLM completed informal consultation with the USFWS for the Proposed Action on BLM land, along with other projects that maintain spotted owl habitat. The Letter of Concurrence (LOC) from the USFWS (USDI-USFWS 2007 p. 23) determined the effects to spotted owl, or designated spotted owl critical habitat to be “may affect, not likely to adversely affect” since the project implements the standards and guidelines of the Northwest Forest Plan and the District’s RMP and will incorporate the mandatory Project Design Criteria (Section 2.3.1). (EA p. 39-40).

Consultation with the USFWS for the Starving Cow and Healthy Murph Timber Sale and Fizzy Stew Stewardship Project (analyzed under the Middle Cow LSR EA) was completed in the 2007 and 2008 Letters of Concurrence. Foreseeable projects analyzed under the Westside Projects EA and in CHU OR-32 are included in the Perpetua EA analysis as maintaining nesting, roosting, foraging, and dispersal habitat for cumulative effects and is currently being consulted on with USFWS.

Tara Lowrance-Mattis, Wolf Creek, OR

15) Comment: Tara Lowrance-Mattis states that the language regarding the disposition of excavated material at the end of the 33-5-7.0 road is unclear.

Response: Page 28 of the EA states “Disposal of end hauled material at the end of the 33-5-7 road or where the proposed road intersects an exiting skid trail on the saddle are not expected to result in sediment entering stream channels because of the flat topographical features and there are no mechanisms for waste material to enter stream channels.”

The Water Quality Project Design Features on page 16 of the EA states:

- Excess excavated material generated from road construction activities would be end hauled to the Board Tree Rock Quarry T33S-R5W-Section 18, the end of the 33-5-7 road, or where the proposed road would intersect an existing skid trail on the saddle. Material end hauled to the Board Tree Quarry would be placed on the hillslope side of the road next to the quarry at a 1:1 slope. Exposed soil would be planted with native seed and mulched with certified weed-free mulch.
- Exposed soils, created during construction activities along either side of the constructed roadbed, would be mulched with certified weed-free mulch and planted with native seed by Oct. 15th to reduce the amount of material that would be prone to erosion.

Therefore, the mulching and seeding for soil stabilization applies to locations of exposed soils from road construction and deposition of excavated material.

This comment will be addressed in the revised EA, including Figure A6-8.

16) Comment: *Ms. Lowrance-Mattis views the EA as inaccurately describing the topography for deposition of excavated material as flat, and Lowrance-Mattis describes the slopes above the road as averaging 70% above and 60% below the 33-5-7.0 road.*

Response: Page 6 of the EA states “Disposal of end hauled material at the end of the 33-5-7 road or where the proposed road would intersect an existing skid trail on the saddle are not expected to result in sediment entering stream channels and therefore CCH (Coho Critical Habitat) because of the flat topographical features and there are no mechanisms for waste material to enter stream channels.” The flat topographical features referred to are the road surface at the “end of the 33-5-7 road” and “existing skid trail on the saddle”, not the slopes above, below or beyond the roads or skid trails.

17) Comment: *Ms. Lowrance-Mattis states “ it is a very reasonable concern to maintain the stability of the soil against water-borne erosion in the project area.”*

Response: See response to comment #7 regarding potential erosion from the proposed action. To mitigate for slope steepness, this first 300 feet would be full bench construction which would prevent excessive erosion, or any potential slumping issues. Slopes throughout this Project Area have sufficient coarse ground cover, in the form of ground vegetation and/or downed woody debris and fine overstory litter, to keep erosion primarily on site.

Boyd Peters, Legacy Lands Project and Francis Eatherington, Umpqua Watersheds, Inc.

18) Comment: *These commenters had concerns regarding impacts to drinking water sources on the Cabbage Lane property and requested the potential impacts to these sources to be analyzed from the proposed right-of-way road construction.*

Conservation Easements benefiting late successional forests held by the Southern Oregon Land Conservancy (SOLC) will suffer.

One of these commenters requested the EA to be withdrawn and to start over with scoping and field trips so that these resources and others can be located and mitigating proposals considered.

Response: The EA (p.16-17, 28) provides measures and analysis of erosion control and did not identify any water sources closer than approximately 200 feet. “As a result of these BMPs and construction techniques, surface erosion would be expected to be slightly elevated above natural conditions, however, since slopes throughout this Project Area are well vegetated, and for the most part only of moderate steepness, eroded material would be expected to remain primarily onsite within the vegetation during the construction and use of this road. Consequently, no measurable additional sediment would be expected to reach the closest intermittent stream approximately 200 feet downslope.”

The proposed road construction occurs on BLM managed land only. Management restrictions of conservation easements apply to private land only. You did not provide any comments on how there would be any violation of the SOLC easements on private land.

Francis Eatherington, Umpqua Watersheds, Inc.

19) Comment: *The BLM did a poor job of scoping for this EA, and thus missed much information that would have been useful in developing the EA alternatives. None of the adjoining landowners were directly notified for scoping opportunities.*

Response: Zarod Rominiski, Board Member of Cabbage Lane Land Trust was contacted through the Medford Messenger and received a copy of the Perpetua Right-of-Way Road Construction Project Environmental Assessment (EA#OR118-06-006). Boyd Peters, representing Legacy Lands (a local conservation organization in the project area), was contacted through the Medford Messenger and also received a copy of the EA.

20) Comment: *The Right-of-Way was impossible to find. How can anyone assess impacts until a survey is in place on the ground?*

Response: The EA provides a description of the project in the (EA p.13) and effected resources in Chapter 3.0 Affected Environment and Environmental Consequences. The project is described as occurring in the transient snow zone (above 2,500) feet (EA p. 2, 55), and near ridetop (EA. P. 3, 7, 39, 66, 69, 77, 78, 81, 83, 84) and provides a vicinity map of the general proposed road location and direction in Appendix 1 p. 62. Moreover, the centerline of the proposed road was staked on the ground. Since receiving the comment, BLM has reflagged the proposed ROW so interested parties can visually assess the extent of the proposed clearing limits.

21) Comment: *The EA map is useless and the exact location of the road is crucial. Fix this problem and restart the public scoping process.*

Response: See response to comment #20. Additionally, based on public comment the BLM is revising the EA with an associated public review period.

22) Comment: *There are mining related cultural resources in the project area and the BLM has not completed an adequate cultural survey.*

Response: BLM completed a cultural survey within the ground disturbing area of the proposed ROW. Areas above or below slope of the proposed ROW do not require surveying as any cultural resources outside this parameter would not be affected. BLM is aware that evidence of past mining activity is common throughout the planning area and adjacent to the proposed ROW. The proposed ROW location would not impact any cultural sites.

23) Comment: *Since the EA is so flawed how could the USFWS make informed comment?*

Response: You did not provide any comments on how the analysis of threatened or endangered species in the EA is flawed. BLM provided a Biological Assessment report including the Perpetua ROW project to consultation with the USFWS. In accordance with regulations pursuant to Section 7 of the Endangered Species Act 1973, as amended, consultation with the USFWS concerning the potential impacts of implementing the Perpetua Forests Company Right-of-Way Road Construction Project upon the northern spotted owl was completed. The USFWS 2007 Letter of Concurrence stated that the effects of projects may affect, but are not likely to affect the spotted owl or designated spotted owl critical habitat since the project implements the standards and guidelines of the Northwest Forest Plan and the District's RMP and will incorporate the mandatory Project Design Criteria (USDI-USFWS 2007 p.23).

24) Comment: *Have you consulted with the Oregon State Parks on the effects to the ghost town of Golden?*

Response: The proposed ROW construction is not visible from the town of Golden. The visual effects of the activities on Perpetua Forests Company will be addressed in the revised EA. Oregon State Parks has been added to the revised EA mailing list.

Zarod Rominiski & Gail Roudebush, Board Members, Cabbage Lane Land Trust

25) Comment: The commenter would like to see all excavated material from the proposed ROW road construction to be end hauled to mitigate potential impacts.

Response: The majority of the excavated material on the first 300 ft of the road construction would be end hauled ("full bench" construction). Only material applied to the fill widening would not be end hauled (see first diagram in response to comment # 5). The remaining 3,309 ft of road construction would be "cut and fill" which requires use of the excavated material into its design. As a result of the project's near ridge-top and upper slope location and project design features, the road construction and log haul are expected to have a neutral effect on mass wasting potential. Such design features include planting native grass seed on the fill slope to stabilize the soil, and installing drainage diversions on the road to divert water runoff back into the slope.

APPENDIX 7– PROPOSED ACTION SITE PHOTOGRAPHS



Figure A6-1. Starting point of the proposed “full bench” road construction



Figure A6-2. Proposed “full bench road” construction near the ridge top



Figure A6-3. Representative photograph of the forest stand and slope along the proposed “cut and fill” road construction



Figure A6-4. Representative photograph of the forest stand and slope along proposed “cut and fill” road construction



Figure A6-5. Representative photograph of the forest stand and slope along proposed “cut and fill” road construction



Figure A6-6. Representative photograph of a scattered 21 inch + diameter tree within the ROW, surrounded by a small diameter younger forest (primarily trees approximately 11 inches dbh).



Figure A6-7. Representative photograph of a scattered 21 inch + diameter tree within the ROW, surrounded by a small diameter younger forest (primarily trees approximately 11 inches dbh).



Figure A6-8. The above picture is aerial coverage of the proposed disposal site located at the end of the 33-5-7 road. Public concerns raised over the potential for mass wasting in the area of this site (seen in the upper portion of this photo) were thoroughly investigated. As depicted above, the proposed disposal site is located in well vegetated and stable portion of the slope where the concentration of upslope surface and subsurface flows would not be expected. The characteristics associated with this site provided no indication that the proposed placement of end-hauled material at this site would pose any increased risk for mass wasting.